

1993

An exploration into the appeal of the work of Frank Lloyd Wright through Christopher Alexander's A Pattern Language and The Timeless Way of Building

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An exploration into the appeal of the work of
Frank Lloyd Wright through Christopher Alexander's
A Pattern Language and The Timeless Way of Building

by

Michael Laine Terlouw

A Thesis Submitted to the
Graduate Faculty in Partial Fulfillment of the
Requirements for the Degree of
MASTER OF ARCHITECTURE

Department: Architecture
Major: Architecture

Signatures have been redacted for privacy

Iowa State University
Ames, Iowa

1993

To my wife Anna Catherine

whose candor, strength, and savoir-faire
appealed to me from our first meeting....

TABLE OF CONTENTS

ACKNOWLEDGEMENTS	iv
CHAPTER 1. INTRODUCTION	1
CHAPTER 2. BASIS OF STUDY	6
CHAPTER 3. BASIS OF METHOD AND MATRIX	12
CHAPTER 4. DISCUSSION OF THE MATRIX	17
CHAPTER 5. EXAMPLES OF MATRIX PATTERNS IN WRIGHT'S WORK	19
Main Entrance and Entrance Transition	22
Sheltering Roof	27
Intimacy Gradient and Entrance Room	31
Light on Two Sides of Every Room	36
Connection to the Earth	40
Outdoor Room and Garden Growing Wild	45
CHAPTER 6. SUMMARY AND CONCLUSIONS	81
BIBLIOGRAPHY	90
APPENDIX: PATTERN DESCRIPTIONS	93

ACKNOWLEDGEMENTS

I would like to thank the following people for their help and inspiration: my parents, Marion and Barbara Terlouw, for their unquestioning and loving support during my pursuit of a graduate degree, as well as for all of their continued love and guidance in life; my father-in-law, Dr. Charles Sloca, for his help in clarifying my thoughts and my writing, as well as his sympathetic understanding of the trials of higher pursuits; my committee members, John Maves, Bob Findlay, and Joseph Kupfer, for their patience, their standards, and their understanding of the difficulties in writing a master's thesis away from an academic atmosphere; my employers, G. Richard Dean and Paul Maurer, who allowed me generous time off from my responsibilities in their office to attend to the needs of this thesis; Joe Chauncey, who gave me my first taste of practical experience, as well as self-confidence in my work and myself, and who continues to inspire me through fond memories of his professionalism.

Finally, and importantly, additional thanks are due to the following classmates of mine: J. Goss, John Eberline, Jill Spradling, Jon Mann, and Doug Lloyd. Each left their own indelible mark on my life, as well as made my experiences in graduate school among the most favorable and memorable times I have, or will ever, know. Thank you.

CHAPTER 1. INTRODUCTION

This thesis explores the source of Frank Lloyd Wright's ability to effect emotion in his work by seeking the source of its general appeal. Its catalyst has been the meaningful experiences I have had of Wright's work, whether through actual contact or through photographic and printed sources. This thesis can best be described, therefore, as a theoretical inquiry springing from "revelations of the most personal nature, which need not be validated by the authority of their reference," to quote Gregory J. La Vardera (111).

In 1931, the Swiss-born architect Le Corbusier spoke of the potential for architecture to move people emotionally in his book Vers Une Architecture. He wrote:

The Architect, by his arrangement of forms, realizes an order which is a pure creation of his spirit; by forms and shapes he affects our senses to an acute degree and provokes plastic emotions; by the relationships which he creates he wakes profound echoes in us, he gives us the measure of an order which we feel to be in accordance with that of our world, he determines the various movements of our heart and of our understanding; it is then that we experience the sense of beauty (1).

Le Corbusier might have considered one such "Architect" to be Frank Lloyd Wright, who had been (and still was in 1931) engaged in making architecture which provoked and waked the "plastic emotions" and "profound echoes" about which Le Corbusier wrote.

In drawings and photographs of Wright's work, as well as in the actual structures themselves, I have consistently experienced a sense of familiarity and resolution. Because of this,

Wright's work seems more satisfying and deeper than the work of many other architects. There seems to be a quality which reflects sympathy for the human senses, heart, and mind. His houses seem "good" to me.

"Good" is such a relative term that it defies hard definition. However, a good building has particular qualities. One group of authors has provided a definition for a "good house," touching upon the essence of those qualities:

Most of the houses we see every day are certainly adequate. They're built with competence according to the building code, they keep out the weather, they're perfectly nice - but no more. Other houses, far fewer in number, have a more powerful impact. They go beyond competence and are satisfying in deeper ways - aesthetically, emotionally, intellectually, perhaps even spiritually. These 'good houses' have the capacity to awaken the senses, memories and minds of their occupants, and inspire productive energies (Jacobson 3).

Despite the focus on houses such a description may apply to any type of building, from a rural hog house to an urban skyscraper. The message, however, is clear; a "good" building has the power to affect us in positive and constructive ways.

Tours through several of Wright's works, especially the Stockman house of 1909 in Mason City, Iowa, have heightened my perception of a particular quality. On these tours, the quality seemed to emerge from the way in which the interior was perceived. Space seemed to flow and slip around corners, to rise and fall. It enticed me with what seemed like a life of its own. The sense of resolution, however, was even more exciting. It appeared as a feeling that all the elements of

the house were as they should be. They seemed to be set together in such a way that all was in accordance and all was sensed as correct, perhaps even inevitable. This resolution gave the houses a sense of personality - a spirit of friendly familiarity - revealed even upon quick tours. In the Stockman house especially, there was enough of this quality to be strongly perceived, and, more importantly, to charge me with understanding its existence in the house. It seemed Wright was manipulating, in an agreeable sense, elements seen and, perhaps, not seen to produce such clear effects upon me.

Wright believed that human beings recognize beauty instinctively. A thing is deemed beautiful, according to him, because it is an embodiment and an expression "of that precious something in ourselves which we instinctively know to be Life.... And when we say, 'It is beautiful,' we mean that the quality in us which is our very life recognizes itself in the object" Wright called this "quality in us which is our very life" the "living human spirit." It is, according to Wright, a thing inherent in all people, a "quality of the mind informed with a sense of man's universe." A mind with such a quality is aware of life as life is aware of it. The mind is drawn to life as life is drawn to such a mind. It desires living (qtd. in Twombly 148). Buildings "live" when they address that "living spirit," and agree with it. But how is it possible for a building to do this?

The work of Christopher Alexander may provide an answer. As a Professor of Architecture at the University of California at Berkeley, he has focussed considerable attention on the issue of a "quality without a name," the hallmark of good and "timeless" building. This quality is curiously close in description to the quality I have sensed in connection with Wright's work.

Along with several associates, Alexander founded the Center for Environmental Structure at Berkeley in 1968 with the express purpose of getting people actively and personally involved in the design, planning, and building of their respective homes and neighborhoods. Such "hands-on" creating was, the Center believed, a craft sorely lacking in the modern world, as well as a way to produce buildings which contained the "quality without a name." Through his research and that of the Center's, Alexander has recognized several "patterns" for good and meaningful buildings, and it is these patterns which become the lens through which some of Wright's work will be seen. The findings assist in understanding the quality I sense in Wright's work.

This thesis represents a personal search for Wright's possible approach to thinking about architecture. Its intent is to explore, clarify, and ultimately reach some sort of conclusions on which continued contemplation can be based. Several questions were central to the exploration of this paper's theme: Is there an explanation for the perceived quali-

ty of familiarity and resolution that permeates Wright's work? How might it be understood through Alexander's patterns? What are the applicable patterns to consider? Are these patterns and Alexander's underlying philosophy the keys to achieving in one's own work the quality perceived in Wright's work?

Ultimately this thesis is concerned with a process of design and a way of thinking about design. It is a paper about looking for the basics of design and what it means to design a building. Because Wright's buildings have so captured my attention, and because Wright's perspective on design was concerned with getting back to "first principles," his work has been chosen as the focus of study.

"All [that] architects may offer by way of explanation is the experience of the places they have created" (La Vardera 111). It is the experience of Wright's buildings, in both actual visits and photographs, that has prompted and inspired this inquiry, and it is with the possibility of creating such memorable experiences for others that this thesis is undertaken.

CHAPTER 2. BASIS OF STUDY

The theory which Christopher Alexander has formulated in his two books, A Pattern Language and The Timeless Way of Building, presents itself as a sympathetic lens through which to look at the work of Wright in order to understand its appeal. That appeal can be better understood through understanding Alexander and his efforts, especially so because of the fact that his work is centered upon the potential of the built environment to move people emotionally and spiritually. Through his theory Alexander seeks to concretize what he calls "the quality without a name" and to explain how it may be attained. This nameless quality is, in description, similar to the quality I sense in much of Wright's work. Describing this quality is not easy for Alexander, however. He offers various words to describe it: "alive," "whole," "free," "comfortable," "exact," "egoless," "eternal," yet no single one of these terms captures the quality entirely (1979, 39).

Despite such evasive definition, Alexander is able to paint a verbal picture of what it means to be in the presence of such a quality. He portrays it as "a subtle kind of freedom from inner contradictions" (1979, 26). It is much like the feeling one has when meeting a person who is genuine and sincere, "a person who is true to his own inner nature, who is "natural". "When you meet a person who is true to himself, you feel at once that he is 'more real' than other people are" (1979, 27). Alexander points out, then, that just as not all people one

meets are equally true to their inner natures, not all buildings one encounters are true to their inner natures. The buildings that are "natural," however, Alexander considers to be "good." There exists a sense of sincerity and genuineness about them. They seem to "live" and to be at peace with themselves. He maintains that all this is due to freedom from inner contradictions (1979, 28). How one rids buildings of inner contradictions forms the central focus of Alexander's work.

Alexander maintains that a system - whether it is a person, a situation, or a building - cannot become any more true to itself by copying something else. It can only hope to be genuine and sincere when it rejects externally imposed criterion of what it ought to be and favors its own inner nature. He offers a process in his books which tells how a system (specifically, a building) can become more true to itself and avoid externally developed images of what it should be. In short, his process tells how a building can be what it "ought to be" according to what it is (1979, 28).

Alexander's theory is formulated around the recognition that every place is given its own unique character from certain patterns of events that keep on happening there (1979, 55). He says that what a town or building truly and naturally is, is governed above all else, by those activities, events, forces, situations that most often happen there - lightning strikes,

children are born, cats nap, etc (1979, 62). These episodes, and the infinite other ones that occur, give the place character. What matters most in a building or town therefore is not its outward shape or its physical geometry, but its events (1979, 65).

Furthermore, Alexander reasons, if buildings and towns are made of patterns of events, especially ones which recur frequently, and if the character of the building and town emerges from those patterns, then "the quality without a name," which itself is the most desirable character a place may have, must be created by patterns of events as well. However, his theory contends that only particular kinds of patterns generate this quality. Such generative patterns are considered to be good and desirable in buildings and are called "living" patterns (1979, 105).

"Living" patterns are patterns which resolve their own forces (Alexander 1979, 120). When a pattern resolves its own forces it means that each event which happens is resolved; it is stable. Alexander sets forth that particular buildings are considered good and make people feel the "quality without a name" - a "greater sense of life" (1979, 105) - because they liberate the people who use them. People are liberated when they are allowed to release their energy according to the situations in which they find themselves. When the environment allows this to happen a person is alive; he is wholehearted, true to himself, and, really, true to his own inner forces.

When a person is free, he is able to act freely according to the nature of the situations he is in (1979, 105). In this sense, Alexander explains, man is in a state of being in which all the forces that arise in him can find expression; he lives in balance among the forces which arise in him; he is unique as the patterns of forces which arise are unique; he is at peace (1979, 106).

Thus, good patterns, those which "live," are those which allow man to resolve conflicting forces in a certain context (1979, 115). By human nature, people tend toward certain desires. Good patterns allow such forces, as these desires are, to happen and to be resolved with other conflicting forces. Such patterns as let this happen are considered "living" because they bring about a liveliness and a thirst for life (1979, 122).

In a building where several patterns occur simultaneously, and where each of these patterns of events is "alive" and self-resolving, each event (i.e., a force) which occurs is resolved and put in balance (1979, 130). The entire system of forces, that is, the building, becomes stable, and alive. It exists as a balance of the forces that arise in it. Inner contradictions are resolved, events can take place naturally, and the building is considered good. It is true to its inner nature by providing without force places for the events which occur naturally in that building type to take place. It therefore becomes

"natural." Such a building is not concerned with external criteria. It is not worried about what it ought to be, but only what it is.

In order to create buildings which are "natural," Alexander and his colleagues have searched for and defined patterns which are "alive" and self-resolving. The process of research involved discovering patterns through observing places which felt good to them, as well as places which felt bad. Each pattern evolved through Alexander's attempts to identify an invariant property which identified what made a number of places feel good, or in the case of bad places, the invariant which would resolve negative and conflicting feelings (1977, 258).

In A Pattern Language, Alexander and his colleagues have set forth 253 "living" patterns culled from these years of research. The included patterns embrace various scales of application. Some are concerned with large scale needs, as in SOUTH-FACING OUTDOORS, while others are concerned with smaller scale items, like HALF-INCH TRIM. The patterns are systematically arranged from large scale to small scale, and Alexander maintains that it is imperative that one uses them from larger to smaller, in sequence. This is done in order that there is a consistent movement from large patterns "which create structures, to the ones which then embellish those structures, and then to those which embellish the embellishments" (1979, xviii).

The main use of these patterns, as presented in A Pattern

Language, is for design. Alexander provides directions on how to choose patterns for whatever building project may be at hand. One of his intents is to show others that the timelessness of beautiful, good places is extremely easy to achieve through the living patterns and procedures he presents. For the purpose of this paper, however, his collection of patterns will be used as an analytical tool.

To do so, we should recognize that the patterns contained in A Pattern Language represent attempts to discover some true invariant feature distinguishing good places from bad places, that good patterns are believed, by Alexander, to be at the basis of the "quality without a name," and that this quality is identical in description to the quality which is felt in much of the work of Frank Lloyd Wright. It is central to this thesis then to see which, if any, patterns occur in that work. The degree to which such patterns are present would indicate a connection between the power of Wright's work and those "good" patterns which Alexander has documented.

CHAPTER 3. BASIS OF METHOD AND MATRIX

Following is a matrix of Wright houses and selected patterns. The houses fall into two groups. The first group is comprised of "Prairie Houses" from the first decade of this century; the second group addresses the Usonian houses of the 1930's. This 30 year span was chosen in order that one might examine whether patterns remained consistent over time. In addition, the houses were chosen on the basis of their photographic and/or personal documentation. Because several of these houses are privately owned, in-depth, direct observation of them was impossible. In addition, the cost of visiting each site was prohibitive, though of the eleven presented here three have been toured thoroughly inside and out and two have been directly studied from without. Of the others, plentiful photographic documentation has been procured and studied, providing substantial material for analysis.

Concerning the selection of patterns, the choices were made by moving through the patterns given in A Pattern Language until patterns of the proper scale were deemed applicable. Alexander has provided three natural divisions in the patterns. There are 1) global patterns which define towns and communities 2) patterns which shape individual buildings and 3) patterns which concern building and construction details. The pattern groups selected for the present analysis fall within the second and third groups. Particular patterns which did not apply to any of the analyzed houses or were found not to be present at

all have been omitted from the matrix. In addition, Alexander's rating system of asterisks has been included in order to study whether the most refined patterns are also the most common. As mentioned in Chapter 2, each pattern which Alexander and his associates at the Center for Environmental Structure have identified is an "invariant field, needed to resolve a conflict among certain forces..."(1979, 275). Each is, therefore, an attempt to specify a definite invariant property common to all ways of solving a problem. Those patterns in the matrix labeled with two asterisks (**) are believed by Alexander and his colleagues truly to be such invariants. Those which still require some work to define their invariant nature are labeled with one asterisk (*), and those patterns with no asterisks are ones which are deemed important, but yet have not been refined to the degree of the first two levels.

It must be kept in mind that this matrix is by no means exhaustive. More houses could be added, as well as any of Wright's public work. Similarly, other patterns may occur in the selected houses which have successfully avoided the camera and author. In addition, Alexander's list of patterns is, despite containing archetypal invariants, not complete in including all existing or possible patterns. Indeed, Wright's work, under comprehensive study, might reveal patterns not included in A Pattern Language, but ones which are still every bit as powerful and living as the ones included therein.

[illegible]

Table 1. (continued)

[illegible]

Table 1. (continued)

[illegible]

CHAPTER 4. DISCUSSION OF THE MATRIX

It is relevant to note that the double asterisk patterns which are listed in the foregoing matrix are also the most prevalent patterns in the houses as well. For example, of the 29 such patterns, 15 occur in 9 or more of the 11 houses in the matrix. By comparison, of the 22 single asterisk patterns (*), only 3 occur in 9 or more houses. Similarly, of the 14 no-asterisk patterns, 3 occur in 9 or more houses. This would appear to indicate that those patterns which Alexander and his associates have deemed the most invariant are also among the most frequent ones in Wright's 11 houses. These patterns are also among some of the most well-known and popular features of Wright buildings, including ENTRANCE TRANSITIONS, SHELTERING ROOFS, LIGHT ON TWO SIDES OF EVERY ROOM, CONNECTION TO THE EARTH, GARDEN GROWING WILD, CEILING HEIGHT VARIETY, SMALL PANES, and WARM COLORS.

It is also interesting to note some things about particular patterns. For example, the pattern CAR CONNECTION is non-existent, as Alexander has described it, in the 6 "Prairie Houses," but it is consistently seen in each of the Usonian homes. This would tend to indicate that Wright was acutely aware of the changing nature of the family in terms of mobility after the First World War, and was able to deal aesthetically with the advent of the car as a common feature of the American home.

Conversely, some patterns became less frequent in Wright's

later work. Balconies and terraces, described by GALLERY SURROUND and SIX-FOOT BALCONY, are not as commonly seen in the Usonians as they are in the earlier works. In addition, the patterns SMALL PANES, HALF-INCH TRIM and RAISED FLOWERS appear to belong more to the "Prairie Houses" than to the Usonians. No one factor can account for these changes, but it is likely that as Wright saw changes in American domesticity he saw also a necessity to change his architecture. Perhaps one of those changes may have been that of more construction in suburbs, where the houses could adapt to more natural sites than could the earlier, urban homes. In more secluded suburbs too there was no longer need for balconies and terraces to be raised above the level of city streets to afford semi-private enjoyment of the outdoors or for small window panes for privacy from passing neighbors.

Finally, concerning the no-asterisk patterns, it is significant to consider the invariant nature of the 3 which do occur in 9 or more of the 11 houses. These patterns are THE FLOW THROUGH ROOMS, WINDOWS OVERLOOKING LIFE, and ROOF CAPS. While Alexander does understand that these do have some merit in the built environment, he is less willing to admit that he has found their true invariant nature. This author suggests that the overwhelming use of these 3 patterns in these 11 houses may indeed provide some indication of their deeper timelessness and potential as true invariants.

CHAPTER 5. EXAMPLES OF MATRIX PATTERNS IN WRIGHT'S WORK

In Chapter 2 it was noted that, as presented in A Pattern Language, each pattern defines a problem occurring within some context and provides a solution for that problem. Alexander explains that the solutions in the patterns are also described in such a way that one can use the solution "a million times over, without ever doing it the same way twice" (1977, x). The solution gives an "essential field of relationships needed to solve the problem, but in a very general and abstract way" (1977, xiii). The problem stated at the beginning of each pattern, therefore, is solved by adapting the solution to such things as the preferences of the builder and the local conditions (topography, climate, orientation, etc.). That is, the solution is used within a particular context.

Because of such general applicability, Alexander considers each solution as a rule, or principle, for solving a problem. Such principles, rather than forms, become the basic elements for the making of buildings. "The pattern, and the real situation, together, will create the proper form..." (Alexander 1979, 397). Emphasis is not on the combining of forms to make an enclosure for necessary functions, but on the applying of principles to each unique situation, in order to create the most appropriate form.

Frank Lloyd Wright, too, perceived principle to be the true basis for form and architecture, as well as the basis for all creative endeavors. The potential of any artist to be worth-

while in the act of creating lay, he believed, in the degree to which that artist is in command of principle, or is being commanded by it. Either way the artist must be aware of principle, for Wright felt that all truly creative artistic work comes out of the "working of the master - Principle" (1975, 229).

Like Alexander today, Wright saw principle as the essential reality of all things (1970, 103). Speaking of "abstraction," Wright even used terminology like that of Alexander: "By 'abstraction' I mean taking the essence of a thing - anything - the pattern of it, as the substance of reality" (1972, 45). This choice of terms suggests, as well, that Wright's way of thinking concerning the creation of buildings may be similar to that of Alexander.

This is supported by Curtis, who sees Wright's architectural system as being based on principles (87). Concerning this he states, "A style based on principle will embody a sort of 'system' of building forms which combine and recombine according to grammatical and intuitive rules. Such a 'formula'...is an abstraction which allows many creative possibilities around a few central themes"(83). Curtis also believes that the solution to Unity Temple was found by Wright's application of self-developed principles to the program for a sacred institution.

The picture thus presented is of Wright pursuing archetypal

principles akin to the patterns of Alexander, and using them to derive unique solutions for each new project. The principles came first and were the beginning point for design. They were "guide-lines within which any artist may sift materials, test motives and direct aims, thus roughly blocking out, at least, a rational basis to nourish his ideas and ideals of work" (Wright qtd. in Kaufmann 88). Form was determined and derived from them; it was not pre-decided and applied. Reviewing Wright's work, one author said, "...the manifold arrangement of the parts, the lively grouping of building masses, are to be viewed as the result of the inner logic of design, and not as a brilliant showpiece of a deliberately picturesque composition" (Behrendt 398).

In the discussions which follow, occurrences in Wright's work of several patterns from the foregoing matrix will be pointed out. In doing so, it is essential for one to realize that what is important in these discussions is the appearance of the same patterns time and time again. At the same time, however, those patterns must be understood as principles, and that what is represented by the built work is in reality Wright's use of the same principle over and over again, only in different times and places.

Nine patterns will be discussed, each one a double asterisk pattern occurring in nearly every, if not all, the houses listed in the matrix. These have been chosen because they represent the principles which apparently both Alexander and

Wright feel are most essential to good design in architecture. In each discussion the pattern's problem/solution statements, quoted from A Pattern Language, are given to set the stage. (Such problem/solution statements for each of the patterns listed in the matrix are provided in Appendix A.) Following each statement is the discussion of the way in which the pattern is seen to occur in the Wright houses listed in the matrix. Accompanying figures are grouped by house, but referenced out of order according to their pertinence.

Main Entrance and Entrance Transition

Pattern 110, MAIN ENTRANCE

Problem: Placing the main entrance is perhaps the single most important step you take during the evolution of a building plan.

Solution: Place the main entrance of the building at a point where it can be seen immediately from the main avenues of approach and give it a bold, visible shape which stands out in front of the building.

Pattern 112, ENTRANCE TRANSITION

Problem: Buildings, and especially houses, with a graceful transition between the street and the inside, are more tranquil than those which open directly off the street.

Solution: Make a transition space between the street and the front door. Bring the path which connects street and entrance through this transition space, and mark it with a change of light, a change of sound, a change of direction, a change of surface, a change of level, perhaps by gateways which make a change of enclosure, and above all with a change of view.

These two patterns will be considered together due to the fact that much that concerns one concerns the other. While Wright never neglected the importance of a main entrance, it was often the transition from the public to the private realm that cele-

brated the act of entering the house, thereby christening the entrance as the main one.

For the most part, Wright was fairly responsible in making sure that a visitor knew where to go in order to find the main entrance of the house. The obviousness of the entrance may not have been blatant at all times, but Wright knew how to signal where to begin the search. The main entrance, however, usually was not a "bold, visible shape" as Alexander would suggest in his pattern, but rather tucked away around some corner or hidden by a jutting garden wall and its monumental flower urn. This inconsistency with Alexander may not be as strong as it seems initially, however. While there were not always signs of the entrance upon one's first visit to one of these buildings, usually by following the sidewalk or path around and through the house's perimeter, the entrance was revealed. Then there would have been no doubt as to where the front door could be found. This is especially true of the Prairie houses.

The Robie house is one of the better examples of Wright's use of this technique (Figs. 15, 16). A first-time visitor may find it curious that there apparently is no front door. But by following the sidewalk, one is lead around the end of the house. Here it becomes obvious that there is a walk leading from the public environment to a much more private one, through a transitional space (Fig. 18). The further one moves along this space, the more the house seems to envelope the space and make it its own. There is an increased sense of enclosure, and

this increase marks the transitioning from public to private. The door can be seen to be well enschewed under an overhanging balcony ahead. It is darkened by this overhang, yet one knows it is the main entrance because of the transition one has just experienced. The form and shape are not necessarily bold or declaratory, yet its location and means of access reveal its true nature.

Hidden in a similar manner are the entrances to the Heath and Stockman houses (Figs. 13, 26). Each is tucked behind a wall and not seen upon first inspection of the house from the sidewalk, though one knows where and how to go to most likely find them. In both of these cases, the transition is made by a change in level from the street and announced by a flower urn. Discovery is still part of the experience, but choices in how to get to the house are few. In the case of the Stockman House, for example, there is only one walk leading to the building. In the Heath house, the main entrance is announced at the sidewalk by rather formal steps. At both of these houses, the main entrance is not seen from the street, but it is once again revealed little by little as one follows the clues.

The Martin and Coonley houses share a similar trait in their main entrances and public/private transitions (Figs. 9, 22). Though it appears from available photographs that the Coonley house entrance is less obvious than any of the others

in the matrix, its strong physical distance from the street is shared by the Martin house. The entrance, once again, is called out by the path which one takes to approach the house and which is gradually revealed to the visitor. Yet the actual entrance itself in both cases is much further from the public street, and the need for a transition experience is taken care of in great measure by this distance. The Martin house transition involves a change of level as at the Heath and Stockman houses, but this occurs much later than at the edge of the public sidewalk as it does in those two schemes. It happens as one gets closer to the house, and it seems much more of a semi-private transition.

The Dana house is unique among the Prairie houses in the matrix in that its main entrance is definitely and unmistakably presented to the visitor (Fig. 3). It, more than the others, falls closer to the pattern description for main entrances which Alexander suggests. Its shape and form are unmistakable, and, along with the wide paving in front of it, it clearly marks where to enter. The transition from the sidewalk to the door itself is rather straightforward, being accomplished most obviously by the slight change in level and the low, flanking retaining walls (Fig. 4). Compared with the Robie, or even the Heath house, its transition seems mild. Yet transition continues through the doors, and into the entrance hall beyond, so that by the time a visitor reaches the inner threshold, there is little doubt that the public environment has been surely put

behind. This transition is aided by the gate-like nature of the front doors, the drastic change in lighting, and the sense of entering some primordial cave at the base of a hill. Once again, the experience of the transition suggests that this is not a simple back door, but where one must go if he is to go.

In the Usonian houses of the matrix, the principles of the main entrance and entrance transition are maintained, though they occur in different manners. Two of the Usonian houses, the Pope-Leighy (Fig. 43) and the Pew (Fig. 39), are found in less urban/suburban areas than the others. Because of this, their entrance transitions and main entrances perhaps have less required of them. Based upon available material, not much can be said of the Pew house entrance; and in the case of the Pope-Leighy house, its removal from its original site prevents a true understanding of any entrance transition which might have existed.

Yet one thing can be noted concerning these two houses and the other Usonians in the matrix. Wherever the automobile was parked in relation to the house, the search for the entrance could surely begin. The carport became in these later houses the signal to the visitor as to where to go. They in themselves become bold indicators of the entrance. Transitionally speaking, the experience of finding the main entrance was less involved and perhaps even more direct in the Usonian houses. This is not to suggest that the transition was gone; indeed,

the Willey and Jacobs houses involve changes in levels to effect a transition (Figs. 31, 33). For the most part, however, the sense of removal from the public realm happened by way of an elongated path leading to the front door, sometimes traversed in a car, as at the Pew or Pope-Leighy houses, or by foot, as at the Willey and Miller residences. Thus it may be sensed how Wright was able to incorporate the car into the announcing of the main entrance.

As general principles, Wright maintained main entrances and entrance transitions as part of his houses, both early and late. The transitions often marked the main entrances for what they were, no matter how those transitions were achieved. In addition, the transitions were consistent with the nature of the houses themselves as a whole by creating definite understandings in the visitors of public/private divisions. To be a visitor meant having courage and trust - courage to persevere in locating the entrance, and trust in allowing Wright's nudges and clues to lead you in the right location.

Sheltering Roof

Pattern 117, SHELTERING ROOF

Problem: The roof plays a primal role in our lives, The most primitive buildings are nothing but a roof. If the roof is hidden, if its presence cannot be felt around the building, or if it cannot be used, then people will lack a fundamental sense of shelter.

Solution: Slope the roof or make a vault of it, make its entire surface visible, and bring the eaves of the roof down low, as low as 6'-0" or 6'-6" at places like the entrance, where people pause. Build the top story of each wing right into the roof, so that the roof does not only cover it, but actually surrounds it.

The sheltering roof is perhaps one of the most recognizable features of Wright's domestic work and largely defines for him the role and nature of the house. He was very consistent throughout his career in the way in which he achieved a sense of shelter with the roof, relying mostly on wide overhangs and their resulting shadow lines. As a principle which was used over and over again, the sheltering roof took on many unique forms. A few can be seen in the houses from the matrix.

In his pattern description, Alexander makes a point of describing how a roof may take on a sheltering sense by sloping it down so that its entire surface may be seen or by sweeping the eaves down close to the earth. Wright, on the other hand, rarely relied on these methods and yet, despite this, his roofs generally seem to be as sheltering as any which Alexander may have had in mind.

That effect of sheltering was achieved in large part by Wright's use of large overhangs. In the Prairie houses from the matrix, the Martin, Heath, Robie, Coonley, and Stockman residences display how the overhangs were often accentuated at the corners of the buildings (Figs. 9, 12, 17, 24, 26). The building below seems to recede from the corner, and in cases like the Martin house and the Coonley house, the actual corner of the structure is tucked back deeper than at the sides.

In addition, the amount of soffit which is exposed at various places around the upper reaches of the building tends

to aid in producing the sense of shelter. The soffit is kept plain and flat; the feeling of the ground plane below is reverberated in this plane at the roof. It appears and feels as if the roof is a flat board set up on a house of cards; the planes of the house walls below fold and bend as they need, while the roof maintains a rather calm, simple, and serene line above. In this way it is separated from the rest of the house below. One could imagine exterior walls moving and shifting to and fro while the roof hovers motionless overhead. But it is precisely because of this separateness that the roof is successful as an element of shelter. It remains where it is, despite what may happen below it. It is reliable, and in that trustworthy sense, it is sheltering to the human mind .

Also in these Prairie houses it is seen that the roof is often a low hip. Unless one stands back far enough from the house, perhaps down the sidewalk or across the street, the roof seems to be a flat plane like the soffit which one sees. The Dana house is the only one in the matrix to have a gabled roof, yet Wright is successful in using this roof form to manifest the principle of a sheltering roof as well (Fig. 2). As gabled roofs go, the Dana house roof has a relatively low pitch, and if one imagined it as a hip, it might be similar to any of the ones seen on the foregoing houses. It also appears heavy, as if its weight is forcing its ends to slide out to the sides and especially the corners, where the roof flairs out to make horn-like protrusions (Fig. 4). These help in tying the roof

to the ground plane below as well as sending the eye out to those very ends. The gable ends of the roof also protrude out at their ridge lines (Fig. 1), casting on those areas of wall below slightly deeper shadows that follow the line of the roof itself. Though this roof seems to be more connected to the walls below than was seen in the houses discussed first, a sense of shelter prevails because of Wright's subtle manipulations of the intrinsic parts of the gabled roof form.

As the Usonian house evolved under Wright's hand, the principle of the sheltering roof was maintained, but the way in which it was manifested changed slightly. While the roof still looked like a plane resting on top of the walls underneath it, in most cases it actually became a flat plane. The Willey house is a very early example of the way in which Wright was moving his domestic designs toward the Usonian aesthetic. It displays in its trellis the boldness of the cantilevered plane (Fig. 30). While earlier examples of such treatment can be found, even in some Prairie houses, this signals the way in which roofs would be largely treated from that point on and the way in which it would interact with interior spaces. The roof plane became increasingly observed from inside the house as part of the ceiling overhead (Figs. 41, 42, 49). The sense of shelter was magnified, and the separation of roof and ceiling as two elements lessened. In this way the roofs of the Usonian houses follow Alexander's description of this principle.

From the Prairie houses to the Usonians, the sense of shelter was derived largely from the roof. The principle remained intact and true throughout Wright's career. The early houses relied on the manipulated forms of conventional roof framing methods like the hip and gable to achieve the sense of shelter, but as Wright's thinking matured the roof became less and less conventional and more candid concerning its function. It became more of a simple plane, serving double duty as cover for inside spaces and protection for outside walls (Fig. 36). One element did both; one overhead plane served as ceiling and roof. Shelter had become more direct and honest.

Intimacy Gradient and Entrance Room

Pattern 127, INTIMACY GRADIENT

Problem: Unless the spaces in a building are arranged in a sequence which corresponds to their degrees of privateness, the visits made by strangers, friends, guests, clients, family, will always be a little awkward.

Solution: Lay out the spaces of a building so that they create a sequence which begins with the entrance and the most public parts of the building, then leads into the slightly more private areas, and finally to the most private domains.

Pattern 130, ENTRANCE ROOM

Problem: Arriving in a building, or leaving it, you need a room to pass through, both inside the building and outside it. This is the entrance room.

Solution: At the main entrance to a building, make a light-filled room which marks the entrance and straddles the boundary between indoors and outdoors, covering some space outdoors and some space indoors. The outside part may be like an old-fashioned porch; the inside like a hall or sitting room.

These two patterns are closely related to each other and are best perceived by being presented together. Wright was acutely aware of the need for an intimacy gradient in all of

his houses, and that usually included some sort of entrance room or space at the main entrance. That both principles were manifested through his career indicate the importance they held in his work.

For the most part, in the houses of the Prairie period the intimacy gradient was largely taken care of by the fact that the most private rooms and spaces of a house, especially bedrooms, were located on another floor. In this way, intimacy was generally maintained in a rather simple manner. Unless a visitor was invited to those areas, their privacy was insured.

Yet even the more public areas of the house, like the living room and the dining room, were made more private by the use of an entrance room. Such a room was an expected, formal device of the day in terms of social customs, and in the Robie, Coonley, Heath, Martin, and Dana houses, all of which were built for well-to-do owners, the entrance room was a well-defined, single purpose place in which the visitor was greeted (Figs. 1, 6, 11, 15). Entrance rooms were fairly separate from more private spaces in the rest of the house like the living room and the dining room. In the Robie and Coonley houses, the entrance room occurs on the ground floor, with the living and dining areas on the second floor above. To be invited upstairs was for the visitor surely a sign of friendship and semi-relaxed goodwill on the part of the owner.

But such a choice was open to the owner precisely because of the way in which the house was conceived. It took into

consideration the need for a place where a sudden visitor could be welcomed without the need to tidy-up adjacent rooms or to close heavy doors to insure privacy. Or if the visitor was unwelcome, the house was not immediately opened up to a roving, speculative eye.

Alexander's pattern also suggests that the entrance room include space outside as well as inside to celebrate arrival. Wright's entrance transitions, as noted above, usually contained such a space so that entering the house began before one actually passed through the main door. The sense of entrance began as one moved from the public sidewalk to the less public area around the house. In this way, the intimacy gradient for the house began as soon as one left the sidewalk and journeyed toward the entrance (Figs. 4, 13, 18, 22, 26).

In the Usonian houses, the social need for entrance rooms was waning. No longer was there the formality of the front parlor. Social life was more relaxed. Despite this, Wright still understood the need for some sort of entrance room.

Wright maintained the principle of the entrance space by providing some small area immediately inside the front door to contain the visitor. He or she was not immediately thrust into the family's living area, nor into any other definable space other than that of the "entry". In addition, in many cases an exterior "alcove" served as an entrance space outside the main door as well, setting the stage for the act of entry into the

house.

The view for the visitor was carefully controlled as well. In the plans of each house presented in the matrix, it can be seen how sightlines were moved along the edge of the more private spaces and directed outside, or came to rest on places where the private nature of the room was not at risk of being betrayed (Figs. 31, 33, 38, 47). In this way the visitor sensed the existence of other rooms in the house yet was kept from looking into them.

Such a control set up the feeling for the intimacy gradient of the house which was faithfully maintained throughout. Because most Usonian houses were single level residences, that gradient had to be achieved in ways other than putting the more private rooms on other floors. Wright understood this, and the result was the use of a "tail" in which the bedrooms and baths were contained. The Jacobs house reveals the most obvious use of this idea from the houses in the matrix, but the concept can be seen in the Miller and Willey houses as well (Figs. 33, 47, 31). It is interesting to note that in the Miller house one enters along this tail on the exterior of the house, and as one enters the house itself the hallway down to the bedroom wing is close at hand. Yet one is compelled not to explore that direction first because movement has already been made in the direction of the living room. The hallway is already somewhat behind the visitor; to make a conscious effort to turn around and head in that direction is unnatural. In addition, the

visitor is undoubtedly drawn toward the light of the living room and its view outside (Fig. 50). In some sense, then, the house polices itself in terms of the arrival of visitors. Left alone in the house, a stranger, Wright knew, would react in particular ways to the urgings of the house.

The presence of entrance spaces or rooms and intimacy gradients in the houses of Wright indicate that these principles were especially important to his conception of the home. They can be found to some degree in each house he designed. From the foregoing discussion, it can be seen that the Prairie house employed a formal entrance room, a social necessity of the day, and that it was already part of an intimacy gradient which began at the edge of the public sidewalk. Wright was entirely effective in maintaining privacy zones within these houses, but for the most part it was aided by the use of different floors.

As the Usonian house evolved, so did Wright's ability to achieve a sense of privacy for certain parts of the house. While the social need for entrance rooms slipped away, the human desire on the part of both the visitor and the owner to greet each other in a separate space did not. In addition, the way in which Wright achieved a visitor's sense of removal from the private space of the family became less physical and more psychological. It became more subtle, relying on the very nuances of human thinking, and orchestrated according to those innate ways, rather than the rules of earlier Victorian social

customs. The principles of entrance rooms and intimacy gradients remained intact. The means of manifesting them continued to evolve more and more sensitively and skillfully on Wright's part.

Light on Two Sides of Every Room

Pattern 159, LIGHT ON TWO SIDES OF EVERY ROOM

Problem: When they have a choice, people will always gravitate to those rooms which have light on two sides, and leave the rooms which are lit only from one side unused and empty.

Solution: Locate each room so that it has outdoor space outside it on at least two sides, and then place windows in these outdoor walls so that natural light falls into every room from more than one direction.

The principle of light on two sides of every room is faithfully followed in Wright's work. The issue of whether or not every room in his houses has light on two sides, however, is rather trivial considering the fact that the majority of the rooms do. The point here is not to see that Alexander's patterns are followed verbatim, but to illustrate that in many cases they can be found in Wright's work. Such is the case with the pattern/principle at hand.

The easiest way to comprehend the extent to which Wright's rooms receive light from more than one side is to consider their plans. Relationships of rooms inside to the spaces outside are readily apparent from them.

There is no outstanding difference in the manifestation of this principle between the Prairie era to the Usonian period. This is perhaps due to the fact that the principle can be

manifested only in very few physical ways. That is, if one wants light on two sides, two sides must be exposed in some manner to light. "Two sides" means the same in the Prairie houses as it does in the Usonian houses.

In examining this principle through the study of plans, it becomes quickly apparent how much Wright articulated single rooms in the house. The Coonley house is a fine example of this articulation (Figs. 20, 21). The dining room, living room, master bedroom, and guest bedroom in this residence each "bump" out in plan, articulated from the rest of the house and filled with light from two or three sides.

This same design can be seen in the Heath residence (Fig. 11). Again, the living room, dining room, and various bedrooms are spread out from each other, not contained all within a box, but free to contain themselves in their own enclosures. One may see this happening in the Dana, Martin, and Robie houses as well (Figs. 1, 7, 15).

The Usonian houses follow in the same manner, perhaps even more so due to their smaller sizes and more informal social agendas. The Jacobs house illustrates the point well (Fig. 33). The living room, though sharing some of the same space with the dining area, is articulated slightly apart from that dining area and well away from the bedroom wing; it stands as a room of its own. In addition, even the few bedrooms that are in the house are articulated from each other, thereby exhibiting each as a thing unto itself, a single space (Fig. 36).

The other Usonian houses from the matrix are similar in larger or lesser degrees, but the Pew house brings to one's attention the fact that its second story bedrooms are not articulated (Fig. 38). This presents a very pure case of the principle at hand, and how it is manifested in such an economical way. Each room is situated in a corner, thereby allowing light to be let in from two sides.

The same solution can be found in the earlier Stockman house of the Prairie period. Its concept is based on the economical shape of the square, both downstairs and up (Fig. 26). The most important rooms on both floors are set either in the corners, as is seen in the Pew house, or they occupy one complete side, as the Stockman living room does. Yet even in this early house, the concept of light flowing into a room from several sides can be seen to have been manifested in another way.

This principle does not dictate that the light must come directly from the outside to the inside. That is, the light may flow in from adjacent rooms which themselves are filled with light. In the Stockman house, the living and dining rooms, though they do not have outside windows, are well lit by the light flowing in from the sun porch directly off both (Fig. 28). In a similar manner, the living room of the Heath house is lighted by the light from the adjacent dining room as well as by windows to the porch outside (Fig. 14). This approach is

seen in the Pew house also, where the living room is lit from both the terrace and the dining room area (Fig. 38). Thus Wright's use of open planning afforded the use of light from other rooms to illuminate and brighten adjacent spaces.

In other cases, however, the accommodation of light on two or more sides is made through the use of clerestory windows. While examples may be found in the Prairie houses, this is more prevalent in the Usonians. A typical example can be seen in the Willey house where triangular-shaped windows at the gable ends of the living room provide light from above (Fig. 32). Light now flows in, not only from left or right, but from overhead as well. The Miller house demonstrates this strategy as well in its living room as well with its rectangular clerestories (Fig. 49).

These two foregoing discussions of the introduction of light by means of adjacent spaces and clerestories also point out Wright's finesse with this principle in his later work. In the Prairie houses, by borrowing light from another room, Wright was introducing diffuse and ambient light, a glow that filtered through the room, without harsh shadows or glare. In the Usonians, Wright used the clerestories to achieve the same effect, but in a more direct manner. Light now was diffused directly from outside to inside, rather than from another room. Each major space was able to produce its own diffused outdoor light, working on its own to balance any bright spots from ground level glazing. In this sense each space became more of

an individual entity.

This fact reveals the evolution in Wright's conception of the nature of individual rooms. Whereas room articulation had been the earliest means to express a room as one thing, now it no longer needed to depend on surrounding space to define or light itself. It provided its own, more subtle, light and its own, more subtle personality. Each room was allowed by such means to be what it needed to be: a true and honest expression of its unique use. Yet the room remained mindful of its role in conjunction with other, similarly "freer" spaces. It had, in other terms, reached adulthood.

Connection to the Earth

Pattern 168, CONNECTION TO THE EARTH

Problem: A house feels isolated from the nature around it, unless its floors are interleaved directly with the earth that is around the house.

Solution: Connect the building to the earth around it by building a series of paths and terraces and steps around the edge. Place them deliberately to make the boundary ambiguous - so that it is impossible to say exactly where the building stops and earth begins.

As a general statement, Wright achieves connection to the earth by literally spreading the building out on the site, where possible, and/or by visually making it look so. This is a common attribute of his work, and one most often pointed out to newcomers in the study of his architecture. Wright also uses, as Alexander suggests as a solution, terraces, balconies, and steps to increase this sense of association to the ground.

Perhaps the most readily noticeable single element, howev-

er, is the base which occurs in each of the Prairie houses presented here. It is an actual physical base from which the house rises, and, in its shape, conveys a sense of the weight of the house. But even this aspect varies from house to house. For example, in the Dana house, the base is angled outward slightly, expressing a spread at its very bottom due to the load above (Figs. 2, 4). Similarly, the Stockman house "compresses" its base outward, though, interestingly enough, that base is nothing more than a wooden skirt, of sorts (Fig. 29). It runs around the bottom of the building, floating slightly above the ground itself. As the grass grows, it cannot cover the base (as long as it is reasonably trimmed), and therefore the effect of spreading is not lost. The house still looks connected to the earth.

The four other houses in the matrix have bases which are very similar to each other, but different from the Dana and Stockman houses. These bases appear more as squared-off chunks or thickened slabs, still being compressed by the house above, but making the visual connection to the ground more deliberate and definite. The Martin and Robie houses are almost the same, being thinner than those of the Heath or Coonley houses. But between the Martin and Robie residences there is a subtle difference which indicates, perhaps, a finer sense of resolution on Wright's part of this pattern. The groundline of the Robie house has a more visual spread due to the inclusion of a

narrower band of stone directly above the base itself (Fig. 17). This band provides even more preparation for the building to meet the ground by allowing the wall above to look as though it is "stepping down." Compared to the Martin house, it appears as an easier transition, and therefore a stronger bond to the earth (Fig. 10).

The bases of the Heath and Coonley houses are both much thicker than the foregoing ones, though they too are more "chunky" like those of the Robie and Martin houses (Fig. 13, 22). In both cases, their thickness is in proportion to the sense of vertical height and blockiness which is achieved in the rest of the house. Thinner bases for the Heath and Coonley houses would have appeared "weak" most likely and, as such, not definite enough as statements about union with the ground. Between these two, one can see a similar contrast in effectiveness due to the treatment of the base itself. The Coonley base appears to have four components to help in achieving its visual purpose, including a fine transition from plaster walls to masonry support.

The Usonian houses continued this pattern of connection to the earth, but largely due to elements other than the bases seen in the Prairie houses. Like these earlier ones, however, the Usonians made the connection through physical and visual extensions into the landscape. Perhaps the most obvious device employed by Wright was a very definite concentration upon strong horizontal lines, more marked than in the Prairie

houses. The roofs became more often only thickened lines, while the exterior cladding accentuated the horizontal in its lapping and construction. In addition, most of these houses were single storied, lying low to the earth to begin with.

Among the Usonians in the matrix, the Jacob, Pope-Leighy, Willey, and Miller houses use flattened roof lines and horizontally oriented material in combination with their one story planning to make the connection to the earth (Figs. 30, 35, 43, 48. Wright increasingly used the cantilever to spread the roofs farther out from the building, thereby putting in shade more and more of the earth around the structure, and the building itself. In the Jacobs scheme, Wright created a sunken garden by digging out a portion of the site and piling the dirt up around its perimeter. On this he placed the house so that it overlooked the garden (Fig. 37). The final effect, though, is of the ground at the perimeter of the garden, under the building, being a base for the building. The house seems supported by this earthen foundation, but much more sensitively so, than by a masonry base. One sees how the earth itself becomes the terrace that connects the building to the ground.

Ambiguity arises in the Usonian house as well. Without a base upon which the house is set, the floor slab of the interior flows outward under the walls to become patios and walks. But it is at the same level as the earth outside, and the slab's movement outward is taken up by the ground at its outer

edge. A definite line between what is part of the house's scheme and what is not becomes harder to discern (Fig. 30, 36, 45).

The Pew residence is unique among all the houses of the matrix in that it is set up off the ground, its furthest extensions jutting out over the bank of a lake (Figs. 39, 40). Yet it is perceived as being linked to the earth as strongly as the others. There is no base to speak of, other than the masonry piers which support it. In this case it appears as if the abundance of horizontal lines and cantilevers take care of connecting the house to the earth. In addition, the house itself echoes the stratification of natural rock formations in the layering and piling up of its masses, especially where it meets the edge of the bank.

Thus, from the early Prairie houses where definite, almost formal, bases were typical, to the later Usonian, with their use of no such base, one may see how Wright maintained connection to the earth. It occurred by different means, but stemmed from one basic notion. In addition, the Pew house is indicative of Wright's maturation with this specific pattern. In this house, it can be seen how Wright became more refined in his ability to evoke the sense of connection, not by means of an extra line or two, but by the way the house adjusted itself to the earth. The range of Wright's ability to make connection occur with the earth can best be seen by comparing the Stockman house with the Pew house (Figs. 26, 40). Here, it becomes evi-

dent, are two extremes of one concept, both equally successful, both equally appropriate for their time and place.

Outdoor Room and Garden Growing Wild

Pattern 163, OUTDOOR ROOM

Problem: A garden is the place for lying in the grass, swinging, croquet, growing flowers, throwing a ball for the dog. But there is another way of being outdoors: and its needs are not met by the garden at all.

Solution: Build a place outdoors which has so much enclosure round it, that it takes on the feeling of a room, even though it is open to the sky. To do this, define it at the corners with columns, perhaps roof it partially with a trellis or a sliding canvas roof, and create "walls" around it, with fences, sitting walls, screens, hedges, or the exterior walls of the building itself.

Pattern 172, GARDEN GROWING WILD

Problem: A garden which grows true to its own laws is not a wilderness, yet not entirely artificial either.

Solution: Grow grasses, mosses, bushes, flowers, and trees in a way which comes close to the way that they occur in nature: intermingled, without barriers between them, without bare earth, without formal flower beds, and with all the boundaries and edges made in rough stone and brick and wood which become a part of the natural growth.

These two patterns are best considered together, for often times in the work of Wright one finds a garden growing wild to be an outdoor room as well, with the plants themselves defining a portion of the space. Wright's admiration for nature is seen through his incorporation of plantings into the fabric of his schemes, wherein he provided urns and planters for any number of plants that might spill over their edges and trickle down the sides of his architecture. These two principles, an outdoor room and gardens growing wild, can be found in nearly, if not all, of his houses. These principles, in addition, define

much of Wright's aesthetic for us. His architecture, from the start, has always been closely associated with themes of natural growth and life on the edge between inside and outside.

Sometimes Wright designed a literal "outdoor room" into the plan of a house, as in the case of the Dana house (Figs. 1, 3). It occurs along the south side of the residence, hidden from the street by a raised terrace and its distance from the sidewalk. It is enclosed by the house in some way on all of its sides, and in this sense takes on the air of a courtyard. It is a formal example of such a space. While there occur many terraces and porches in Wright's work, this one is specifically called out in the plan as a type of outdoor living room, therefore justifying, perhaps, its architectural treatment. The Robie and Heath houses also include architecturally articulated outdoor spaces, though they are considered more as urban gardens than as living spaces (Figs. 11, 15).

Many others times, however, Wright used plantings to create and define spaces outside of his houses, while making connections with spaces inside of the house. This is perhaps best seen in the plans of his houses, including the ones from the matrix. For example, the Martin house exhibits this working of the outdoor room principle clearly (Fig. 7). The semi-circle of flowers wrapped around the terrace of the house definitely composes an outdoor space which, in its wrapping, becomes part of the terrace. The terrace, already an extension of the living room, becomes a transition area between in and out. Yet

what is most important is that outdoors is still under the control of the structure of the house; outdoors becomes defined space just as indoors becomes defined space.

The Coonley house presents both architecturally and horticulturally defined outdoor spaces. In addition, in its sprawling plan, one sees a formally planned sunken garden, with strong axes and rectangular shapes (Fig. 20). One could imagine that the plantings are clipped and pruned to match this geometry, much like a formal European garden. But Wright does not do this. Rather, the formal geometry is set up by a series of walks, perhaps paved, within which the garden is planted. These plants are allowed to grow as they might in nature, creeping over the walks, growing together, "nestling" themselves within this geometry. The result is a sense of order, or structure, reverberating from the scheme of the house, tempered by natural growth. The edges of the paths become obscured, and one may no longer know which defines the other. Do the plants or the sidewalks shape the space? Man's control of the natural world finds a middle ground here with nature, where the innate desire of man to order is balanced by the innate quality of nature to be free.

The Usonian houses continue the use of these two principles of gardens growing wild and of outdoor rooms. However, in these cases, the house itself often begins to define the outdoor rooms by the ways in which the house is arranged. The

Willey house shows how the manifestation of this principle began to evolve (Fig. 31). Though the house is in essence long and rectangular, its articulated spaces begin to turn back on themselves in such a way that outdoor spaces become defined. The garden area off the terrace demonstrates this to a slight degree as the steps from the street, the carport, and the terrace itself enclose enough area that one can discern a definite space being formed. This same manifestation becomes much more distinct in the Jacobs house. Here the house in no uncertain terms creates the border for an outdoor room filled with flowers, shrubs, trees, and perhaps vegetables (Figs. 33, 37).

The Pope-Leighy house (Fig. 44) and Miller house (Fig. 47) are both similar to the Willey and Jacobs houses in their use of this principle. In all these cases, the outdoor room is defined by the house, and is therefore more directly a result of the house's structure. The garden/outdoor room becomes more intimate with the house, and because of this it becomes more intimate with the spaces inside. Wright here moves the Usonian house in the direction of the Coonley sunken garden. The order of the house is coupled with the natural growth of plantings, not in a rather applied and superficial way as they might be seen growing from urns and planters in the Prairie houses (Figs. 4, 10, 13, 17, 25), but by making the house part of the garden and the garden part of the house. Does the house or the garden define the space? Order is given to the garden and its

plantings, yet the order, which comes directly from the house, is softened by that garden.

The Pew house presents a final application of these principles in a setting much different from the sites of the other houses. Set among the trees on the shore of a lake, this house demonstrates Wright's ability to adapt a principle to a new context. The outdoor room is accomplished with the use of terraces on both the living room level and the bedroom level (Figs. 38, 40). But in addition, the articulated perimeter of the building defines outdoor spaces at the dining area and the writing desk area. These outdoor spaces, though they cannot be physically occupied like the terraces, still provide a connection to the space indoors.

But the Pew house demonstrates something more. It shows an increased understanding of the potential of these principles. The Prairie houses, while they defined a few outdoor spaces, can be seen to be more like objects sitting in a garden setting (Figs. 9, 12, 25). Plants are allowed to grow up and over their surfaces, and the final effect is sometimes like that of overgrown ruins. Indoor rooms, with this profusion of plantings outside of wide opening casements, had the potential to feel like sheltered outdoor spaces (Figs. 19, 23, 28). But the house remained a fixture in a landscape.

The Usonians begin to incorporate the house more into the landscape because of their unfolded natures. The shape of the

house begins to contain wild-growing gardens and the house no longer appears to be placed within a garden, but around or with one. Plants no longer need to grow up over the house in order to receive a sense of an outdoor space inside because the house itself opens up.

The Pew house appears to straddle these two ideas. Like the Prairie houses, it is placed object-like within a very natural, wild area. Grass and vines and moss can cover its lower stone piers and turn them into modern day relics (Fig. 39). But at the same time, the upper portion of the house performs more like a Usonian residence, with an unfolding tendency and shapes which contain what they will of the outside (Figs. 38, 42). The Pew house demonstrates how the use of principles like "gardens growing wild" and "outdoor rooms" can be applied consistently in an atypical setting with success, and that in just such settings they can begin to be explored in more dynamic ways.

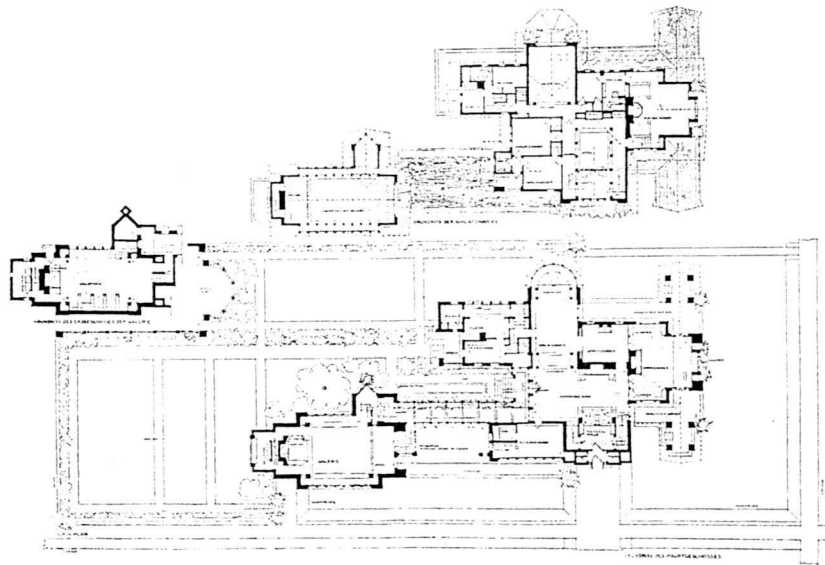


Figure 1. Dana house, Springfield, Ill., 1899, plan
(Wright 1982, 33)

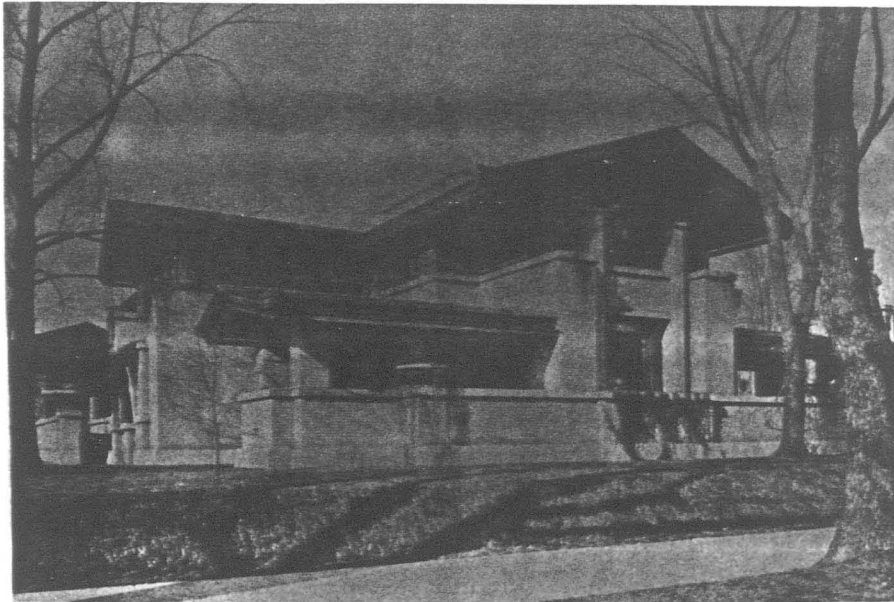


Figure 2. Dana house, east facade
(Wright 1982, 39)

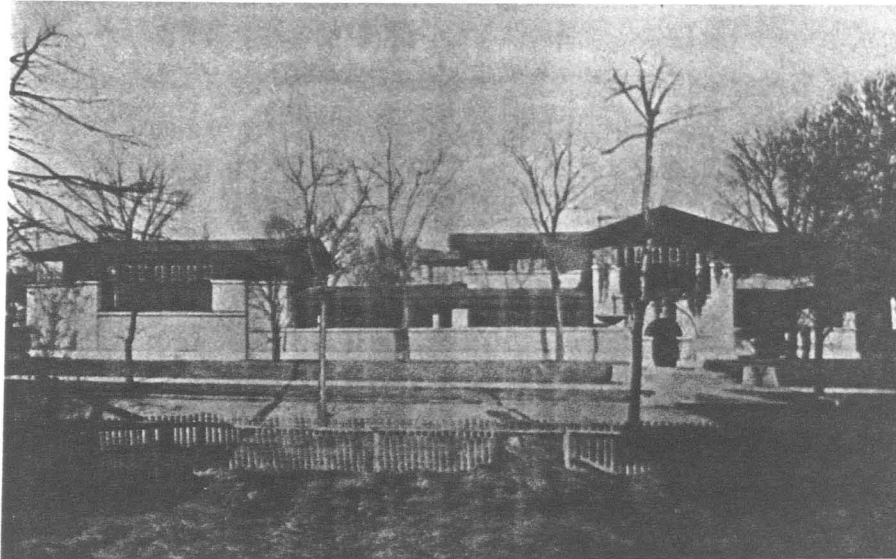


Figure 3. Dana house, south facade
(Wright 1982, 34)

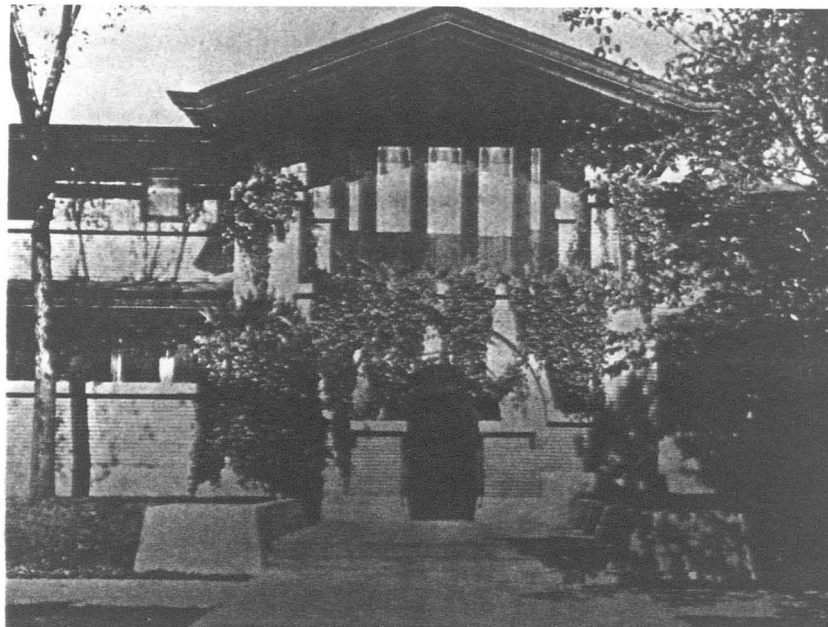


Figure 4. Dana house, details of entrance facade
(Wright 1982, 35)

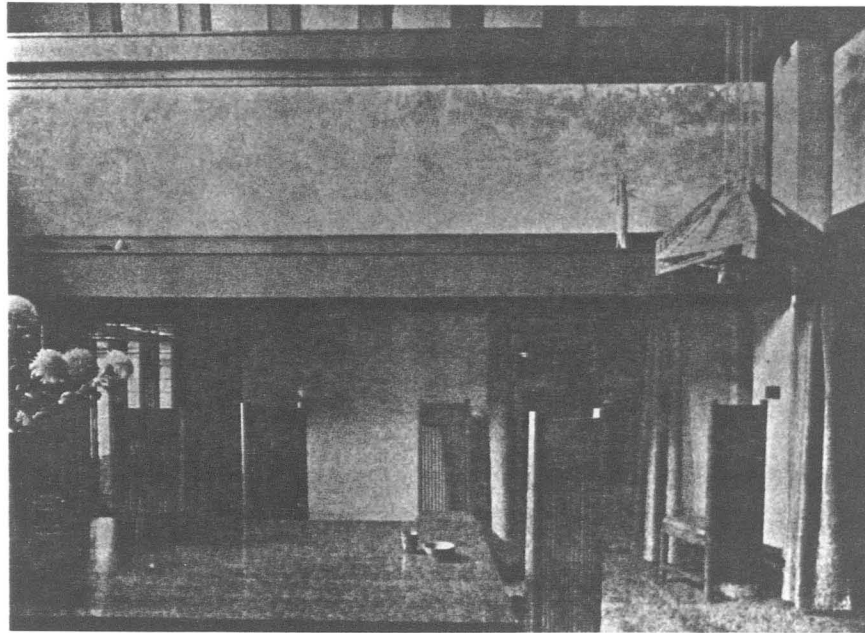


Figure 5. Dana house, detail of dining room
(Wright 1982, 38)



Figure 6. Martin house, Buffalo, N.Y., 1904, reception room
(Wright 1982, 51)

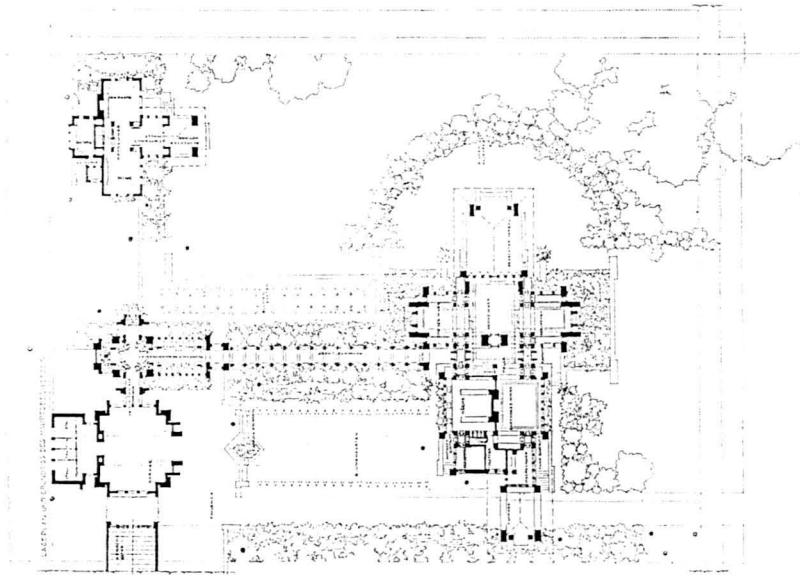


Figure 7. Martin house, plan
(Wright 1982, 44)

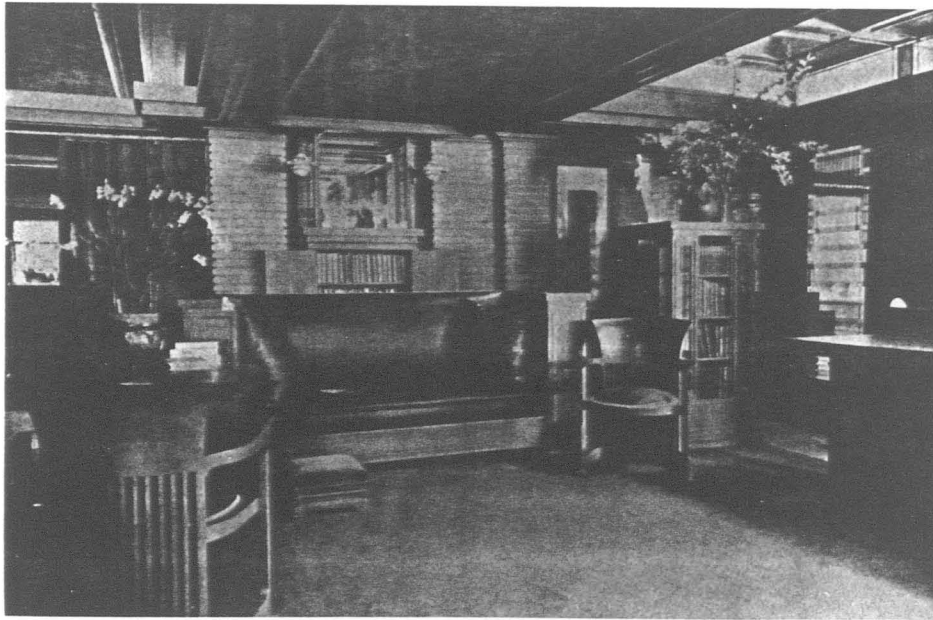


Figure 8. Martin house, living room
(Wright 1982, 53)

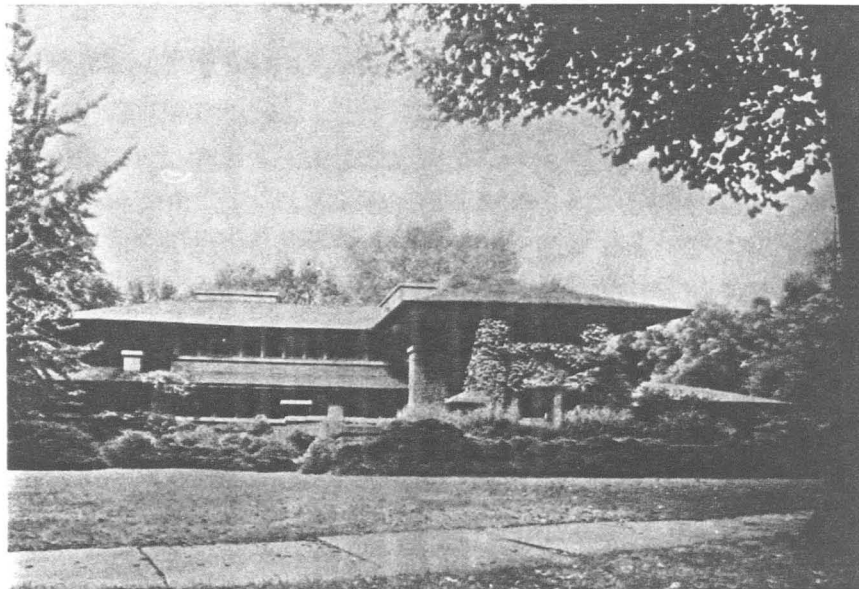


Figure 9. Martin house, west facade
(Scully 46)

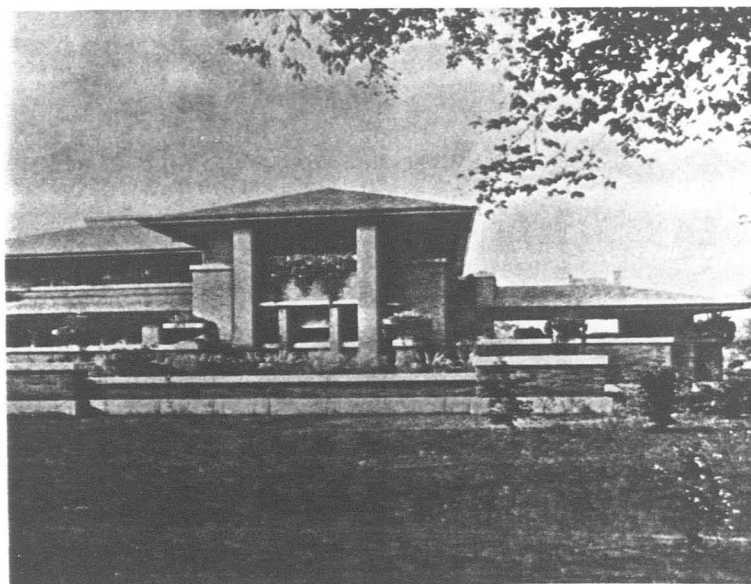


Figure 10. Martin house, west facade
(Wright 1982, 52)

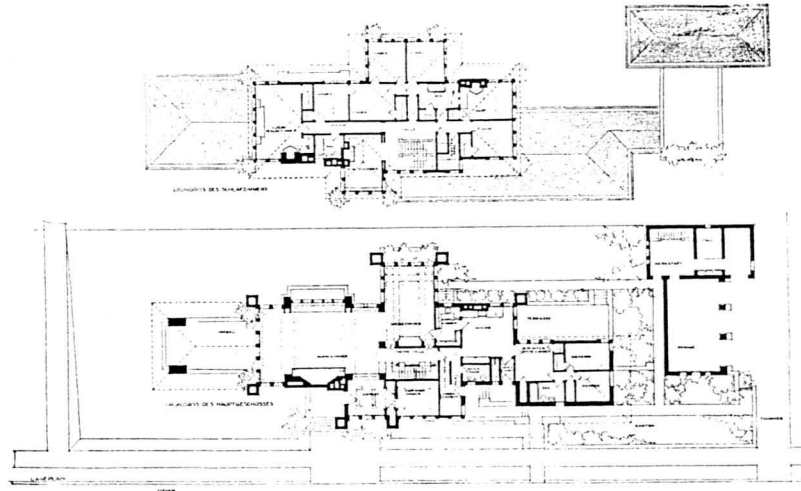


Figure 11. Heath house, Buffalo, N.Y., 1905, plan
(Wright 1982, 79)

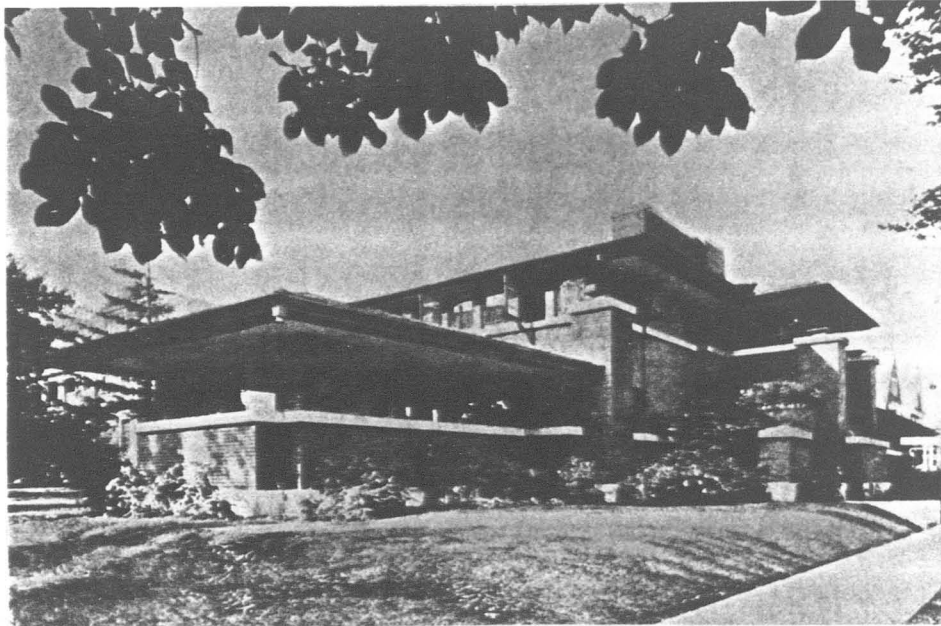


Figure 12. Heath house, entrance facade
(Wright 1982, 80)

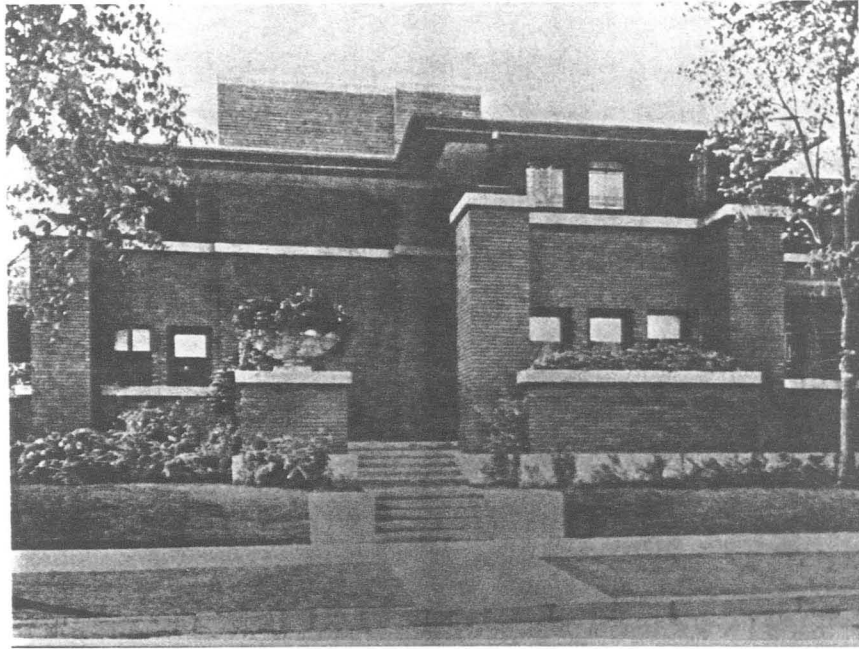


Figure 13. Heath house, entrance facade detail
(Wright 1982, 80)

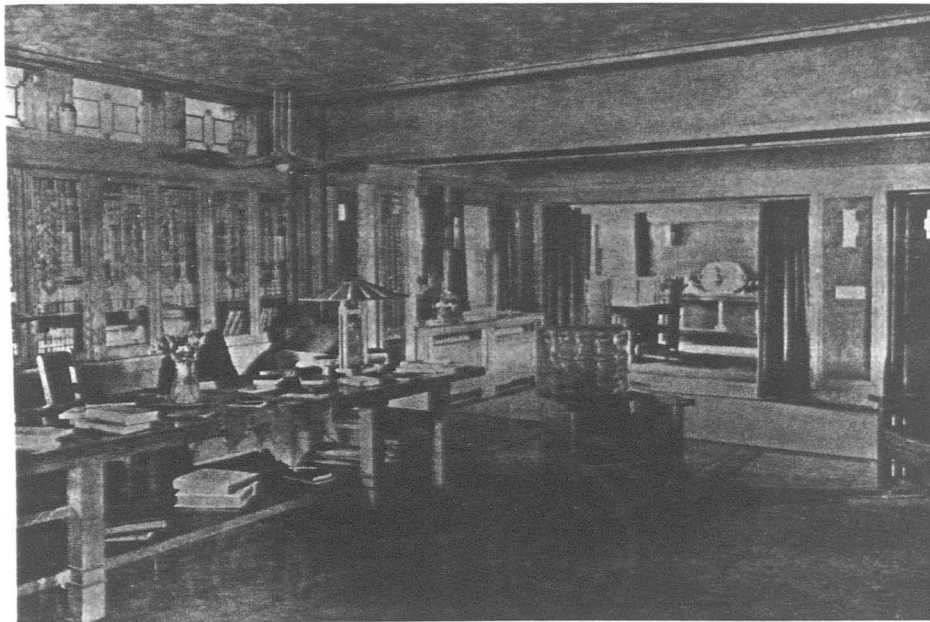


Figure 14. Heath house, living room view towards dining room
(Wright 1982, 81)

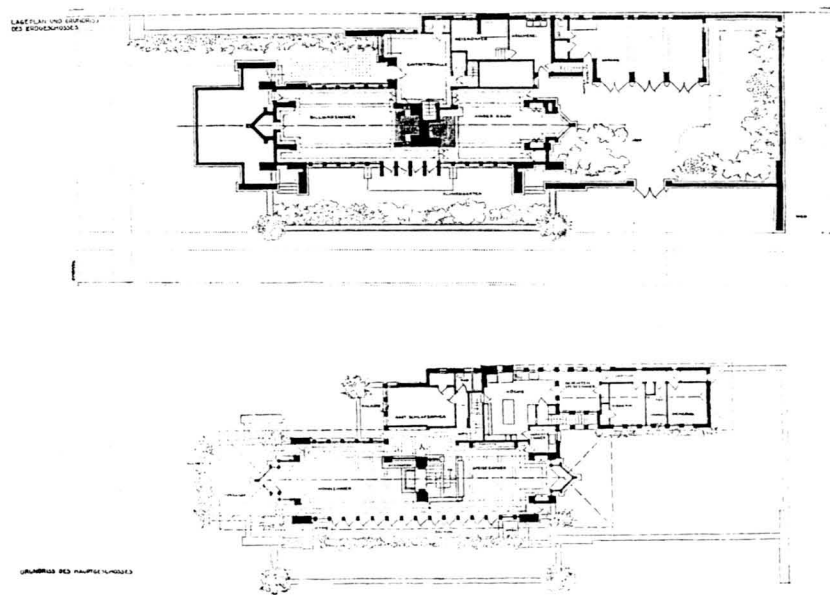


Figure 15. Robie house, Chicago, Ill., 1906, plan
(Wright 1982, 113)

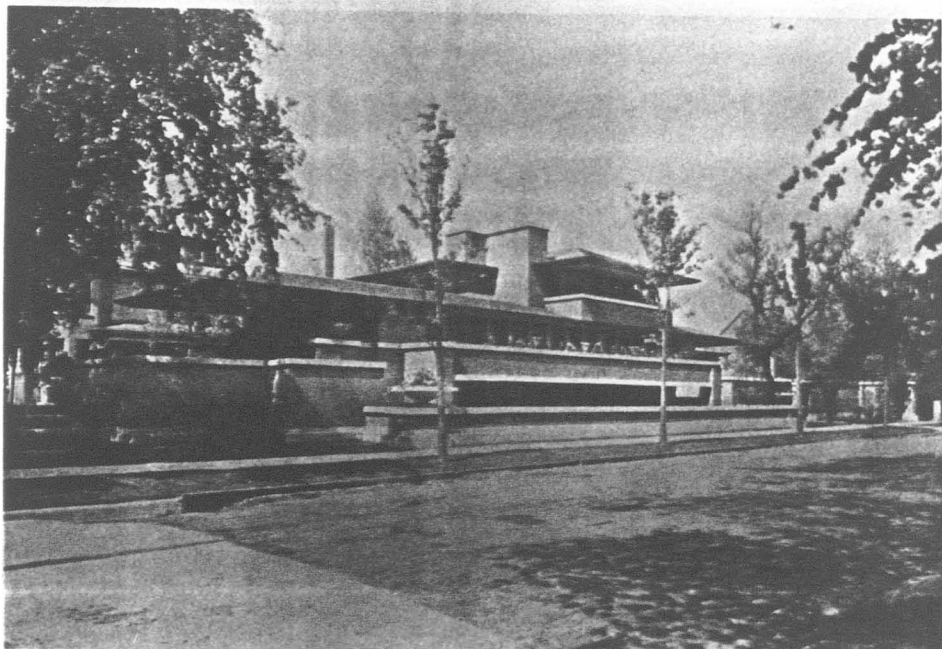


Figure 16. Robie house, south facade
(Wright 1982, 112)

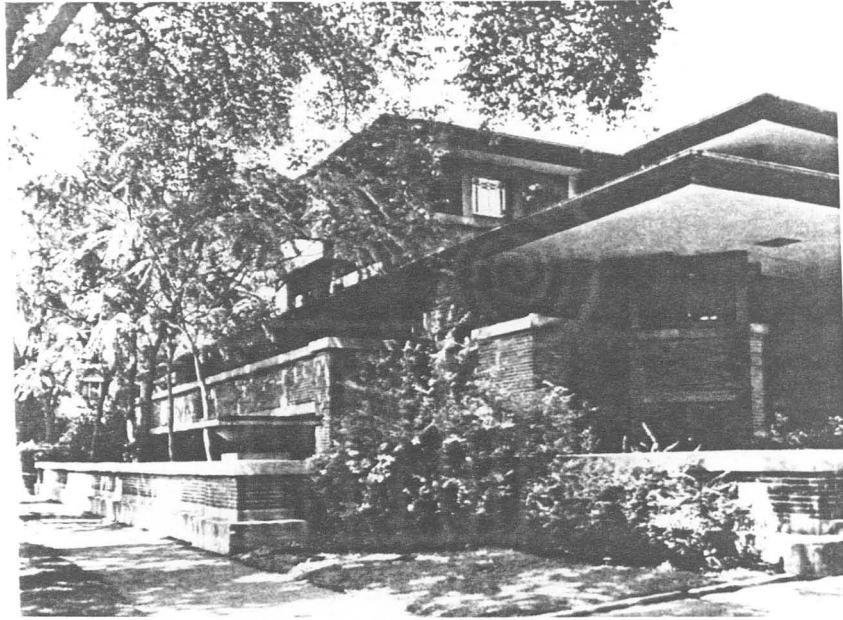


Figure 17. Robie house, oblique view
(Scully 55)



Figure 18. Robie house, entrance detail

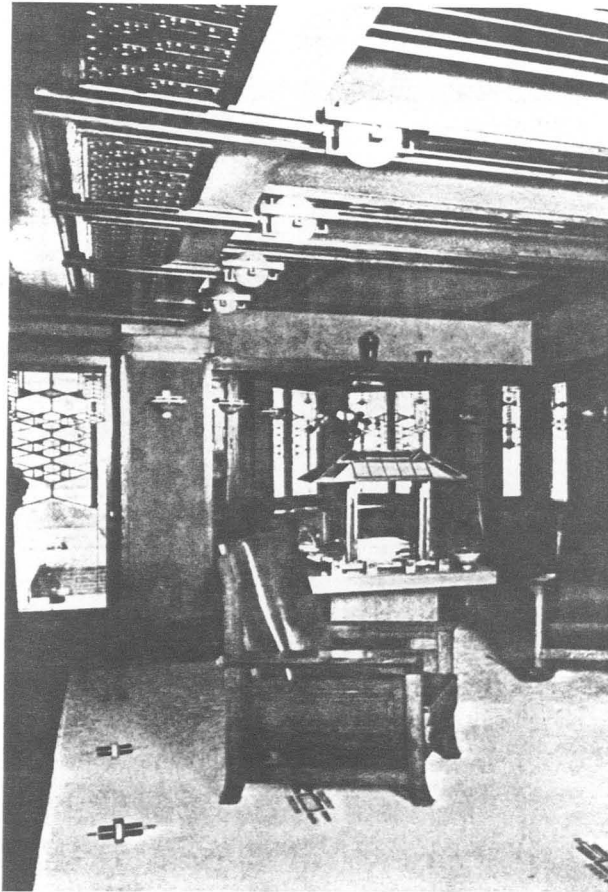


Figure 19. Robie house, living room
(Wright 1982, 114)

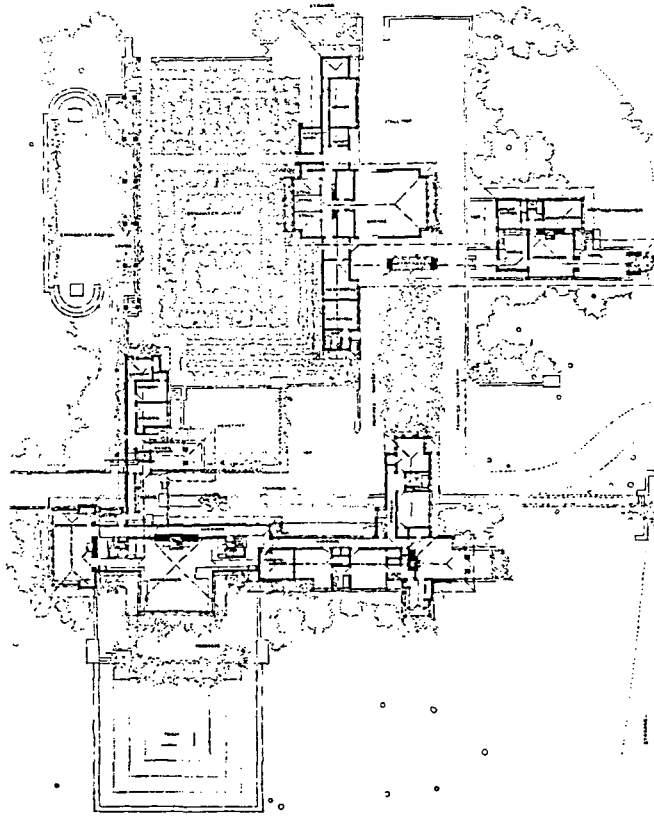


Figure 20. Coonley house, Riverside, Ill., 1908, plan
(Wright 1982, 116)

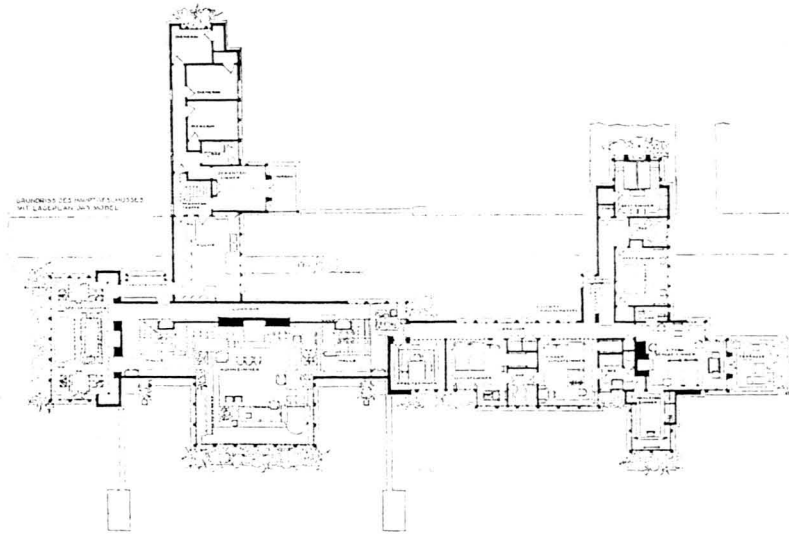


Figure 21. Coonley house, plan
(Wright 1982, 127)

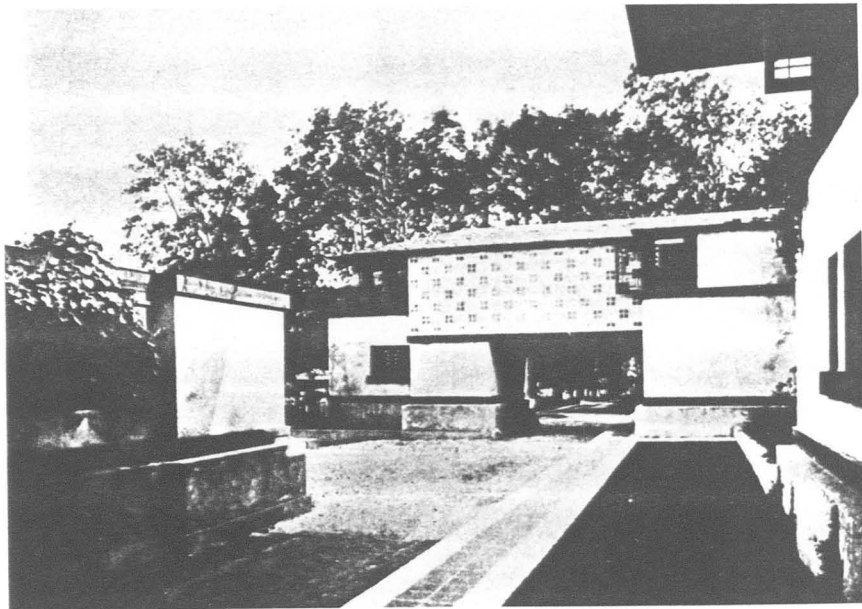


Figure 22. Coonley house, entrance court
(Wright 1982, 123)



Figure 23. Coonley house, galleries and living room
(Wright 1982, 121)

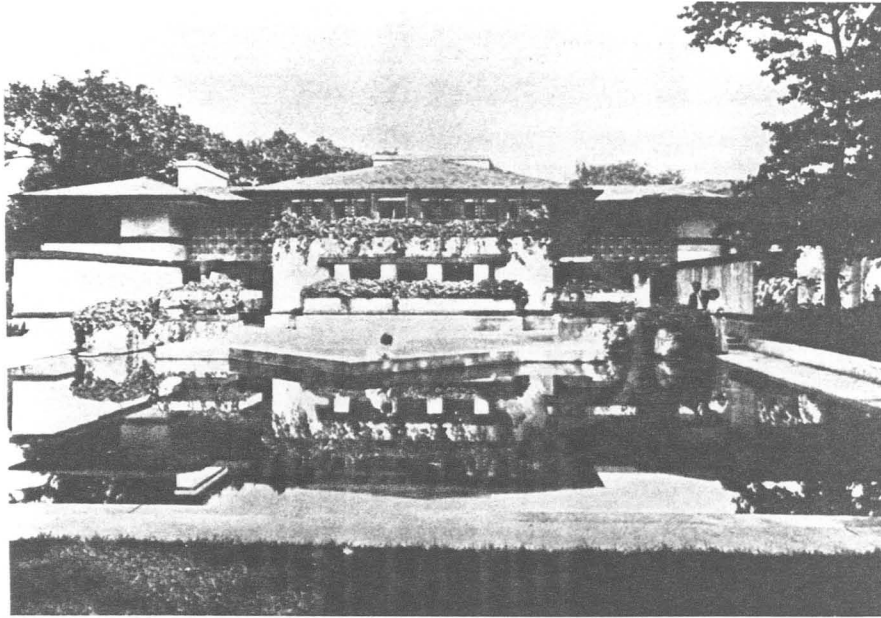


Figure 24. Coonley house, view of terrace
(Wright 1982, 119)

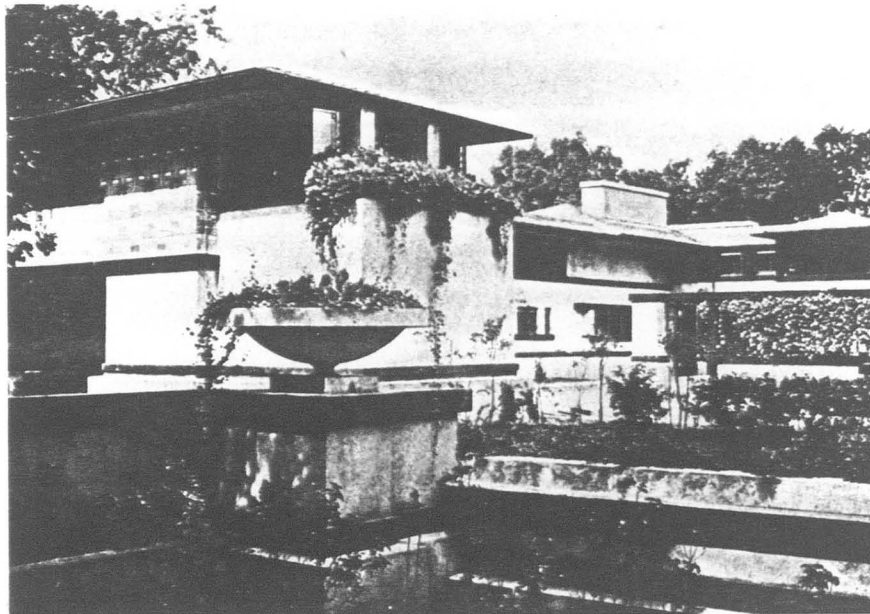


Figure 25. Coonley house, entrance court
(Wright 1982, 123)

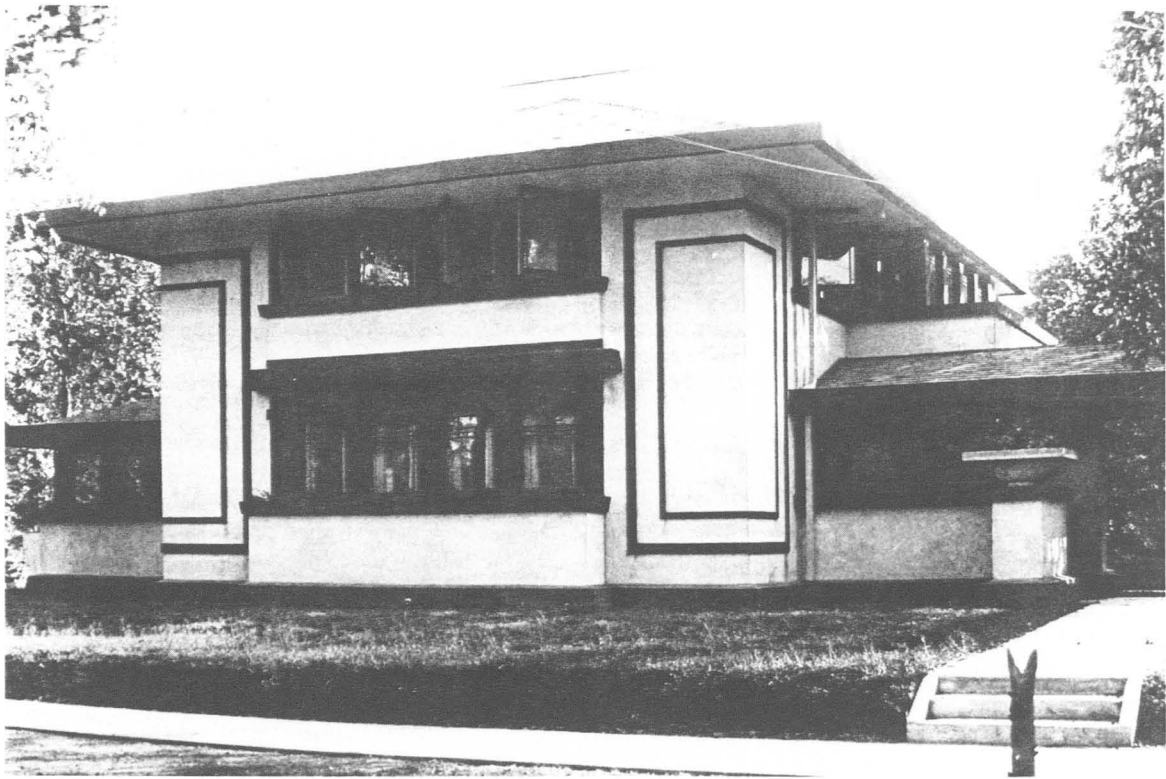


Figure 26. Stockman house, Mason City, Ia., 1908, entrance facade

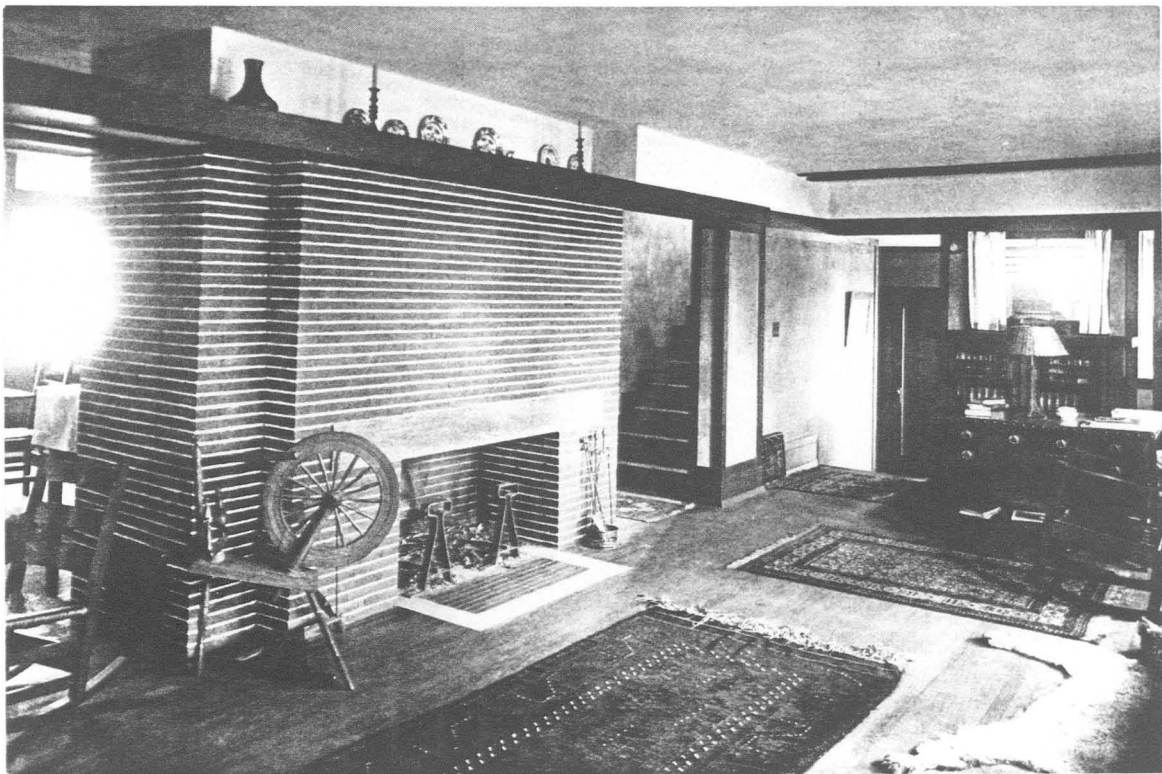


Figure 27. Stockman house, living room and entrance room beyond

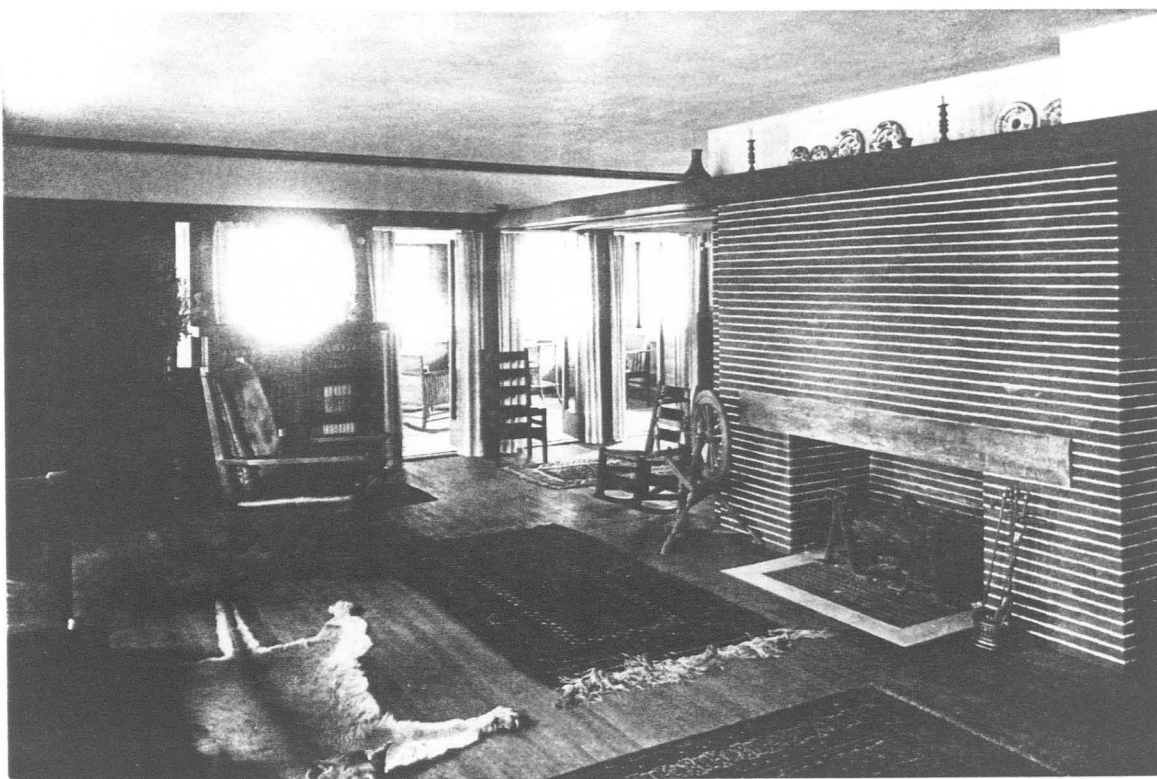


Figure 28. Stockman house, living room and porch beyond

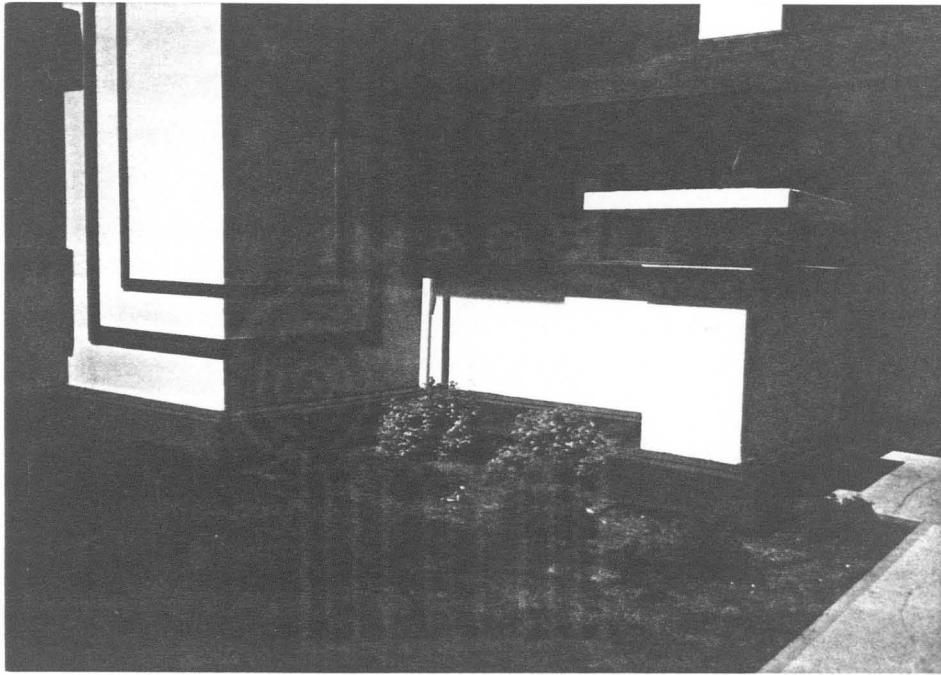


Figure 29. Stockman house, base detail

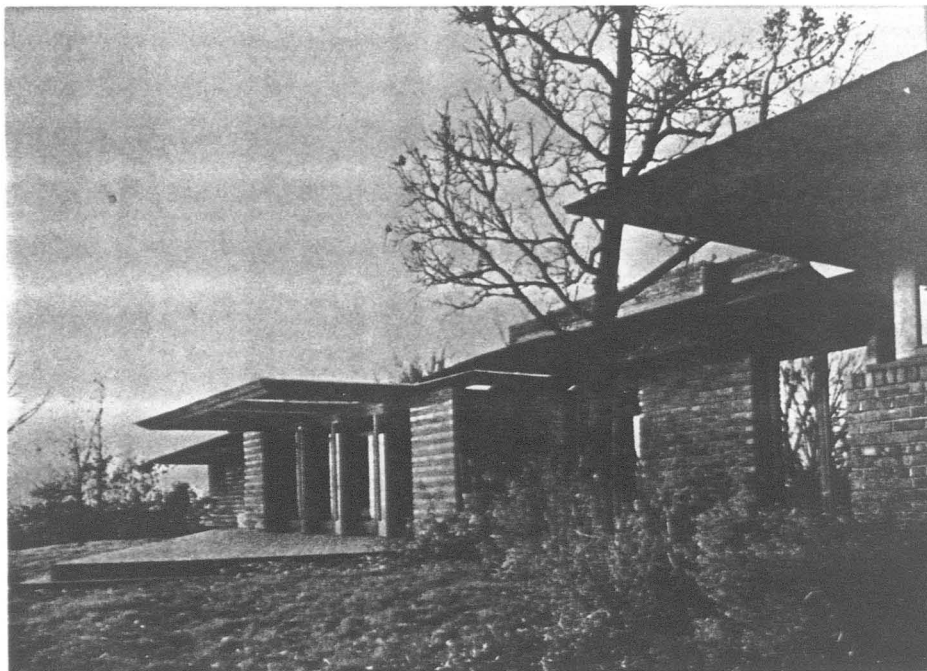
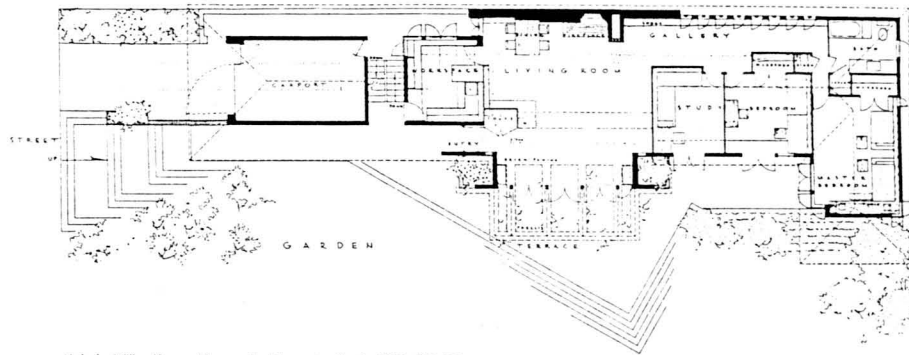


Figure 30. Willey house, Minneapolis, Mn., 1933, south facade
(Wright 1954, 76)



Malcolm Willey House, Minneapolis, Minnesota. Cost in 1934: \$10,000.

Figure 31. Willey house, plan
(Wright 1954, 70)

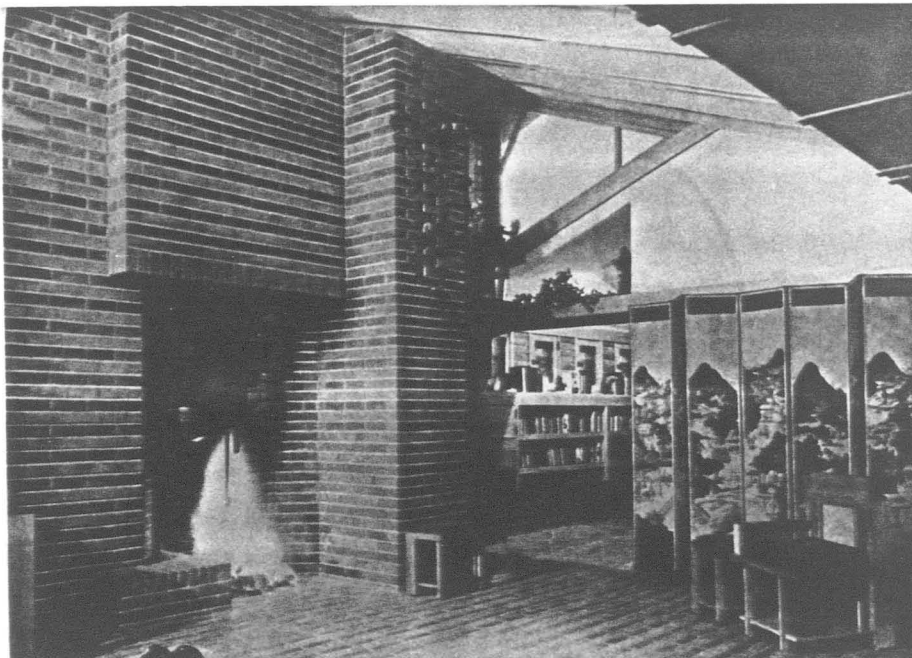


Figure 32. Willey house, living room
(Wright 1954, 75)

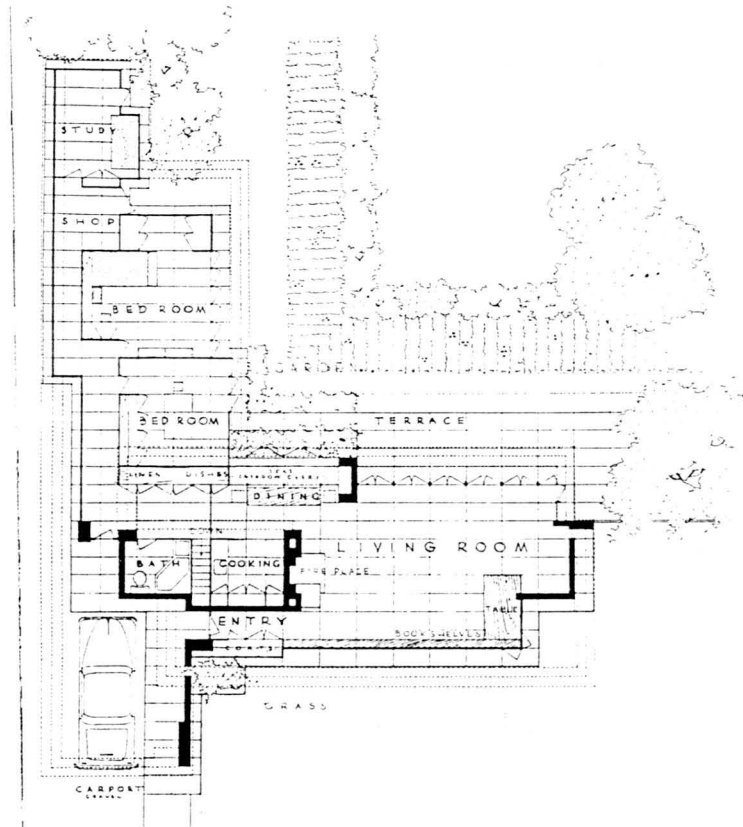


Figure 33. Jacobs house, Westmoreland, Wis., 1936, plan
(Wright 1954, 84)

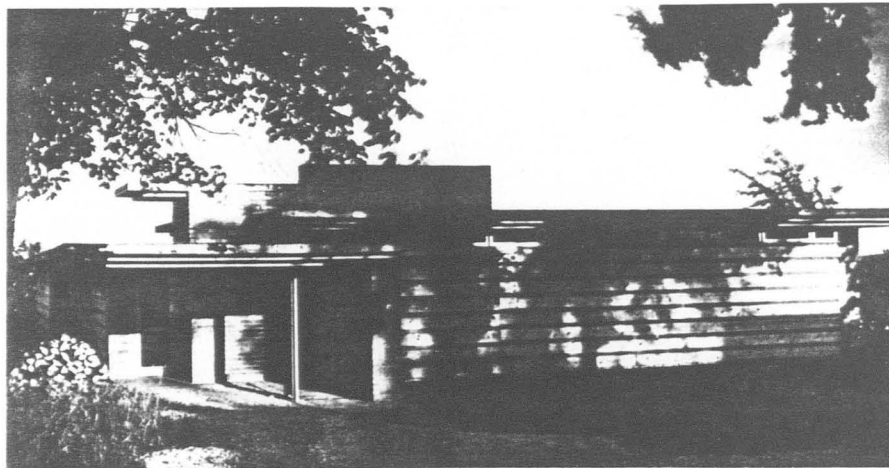


Figure 34. Jacobs house, entrance facade
(Wright 1954, 85)

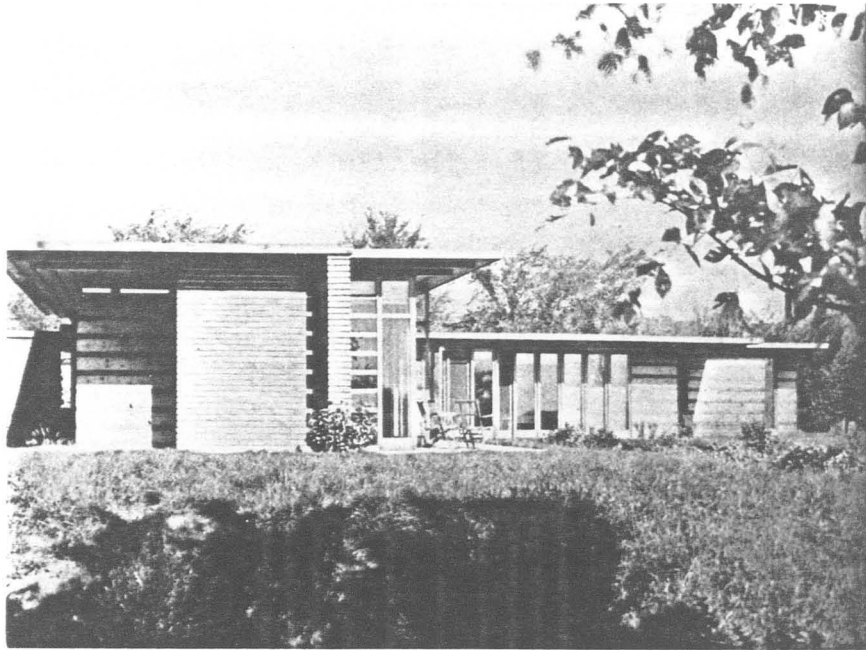


Figure 35. Jacobs house, view of bedroom wing
(Wright 1954, 86)

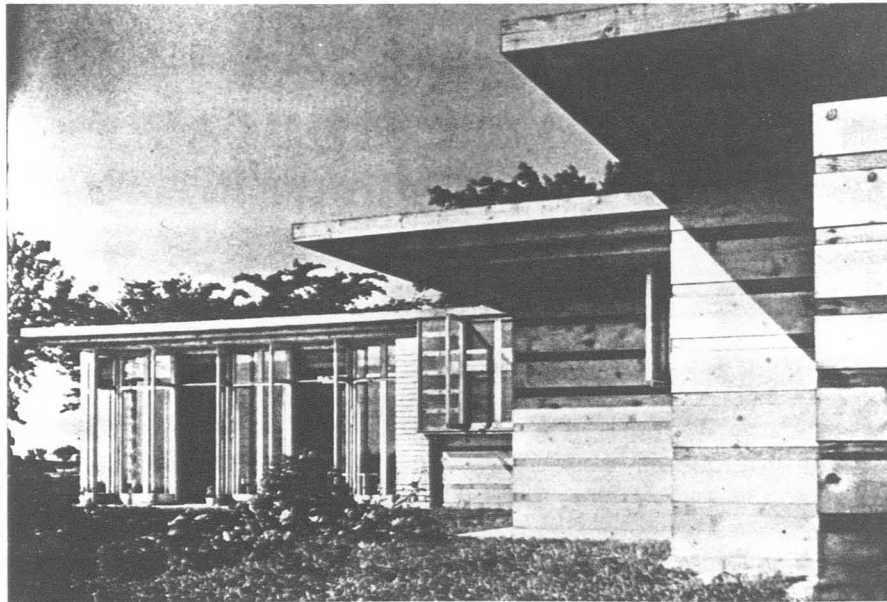


Figure 36. Jacobs house, view of living room wing
(Wright 1954, 87)

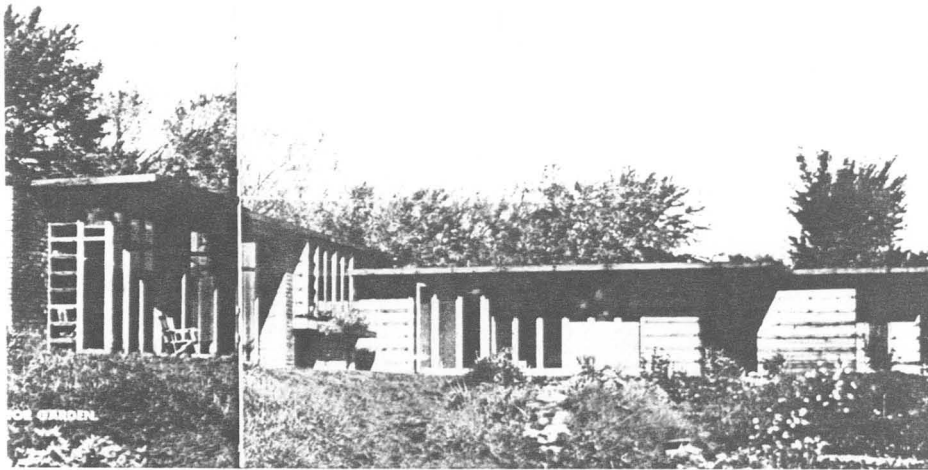


Figure 37. Jacobs house, view into garden
(Wright 1954, 90-91)

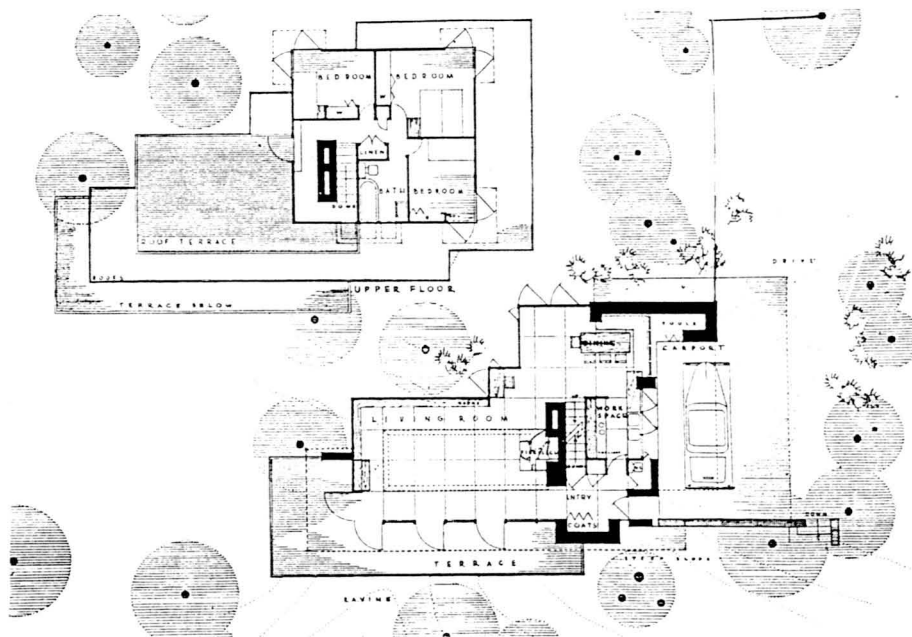


Figure 38. Pew house, Madison, Wis., 1939, plan
(Wright 1954, 131)

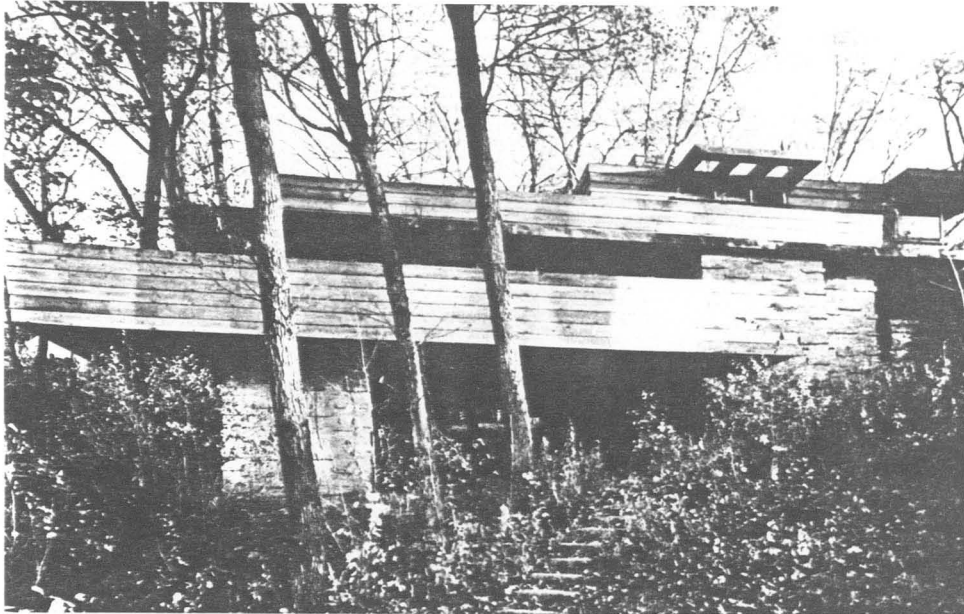


Figure 39. Pew house, exterior view
(Wright 1954, 136)

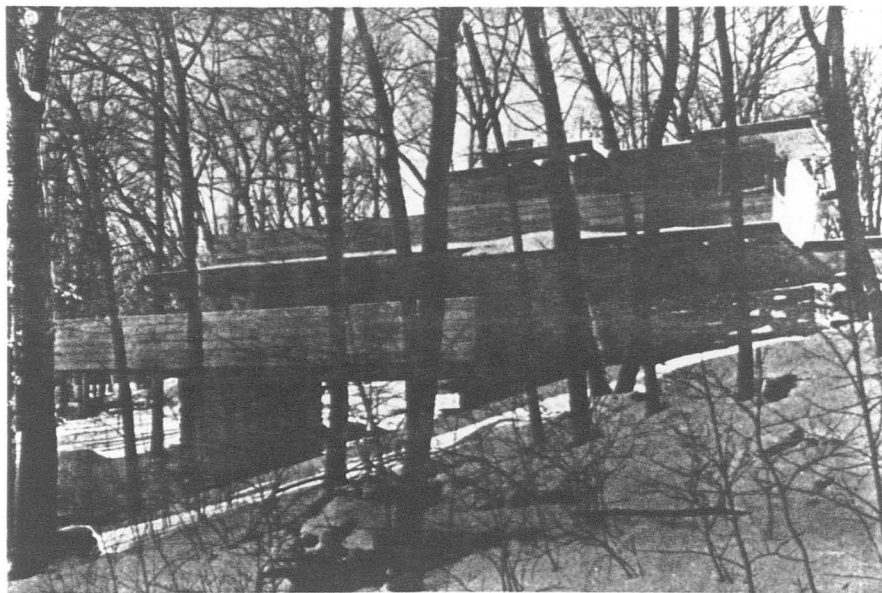


Figure 40. Pew house, exterior view
(Wright 1954, 132)

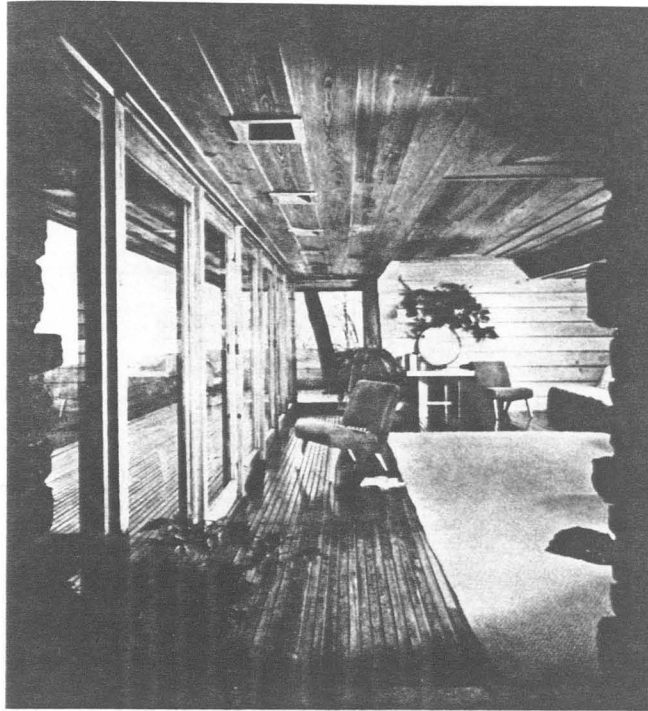


Figure 41. Pew house, living room
(Wright 1954, 133)



Figure 42. Pew house, living room with deck beyond
(Wright 1954, 135)

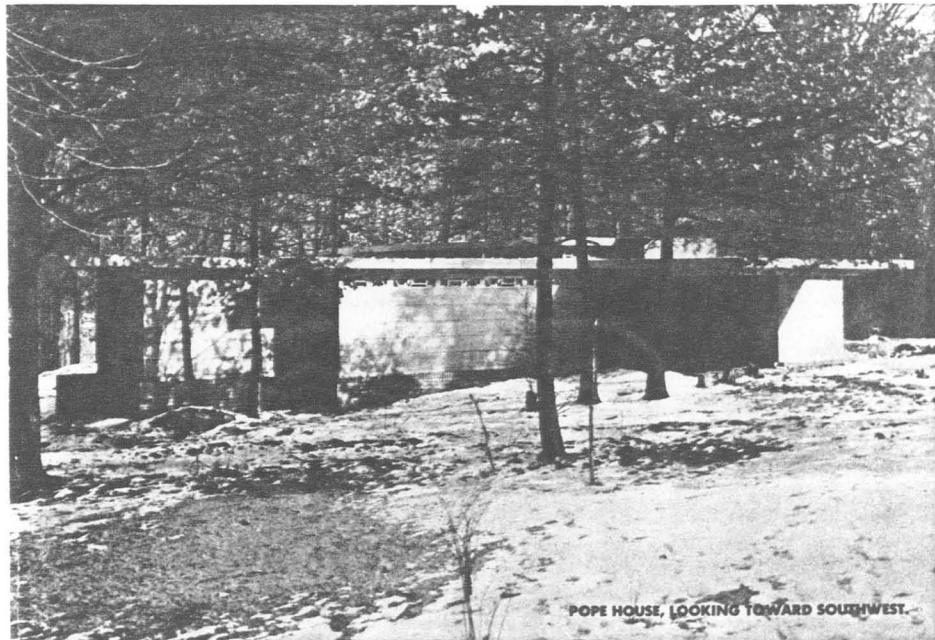


Figure 43. Pope-Leighy house, Mt. Vernon, Va., 1939, entrance view
(Wright 1954, 145)



Figure 44. Pope-Leighy house, rear view
(Wright 1954, 146)



Figure 45. Pope-Leighy house, inside view toward entrance

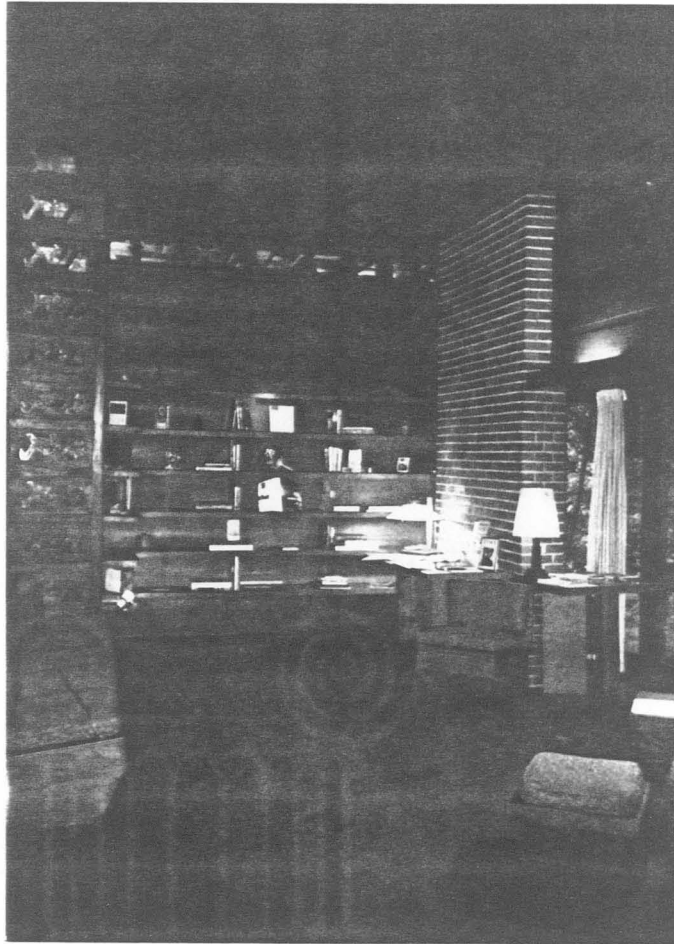


Figure 46. Pope-Leighy house, living room

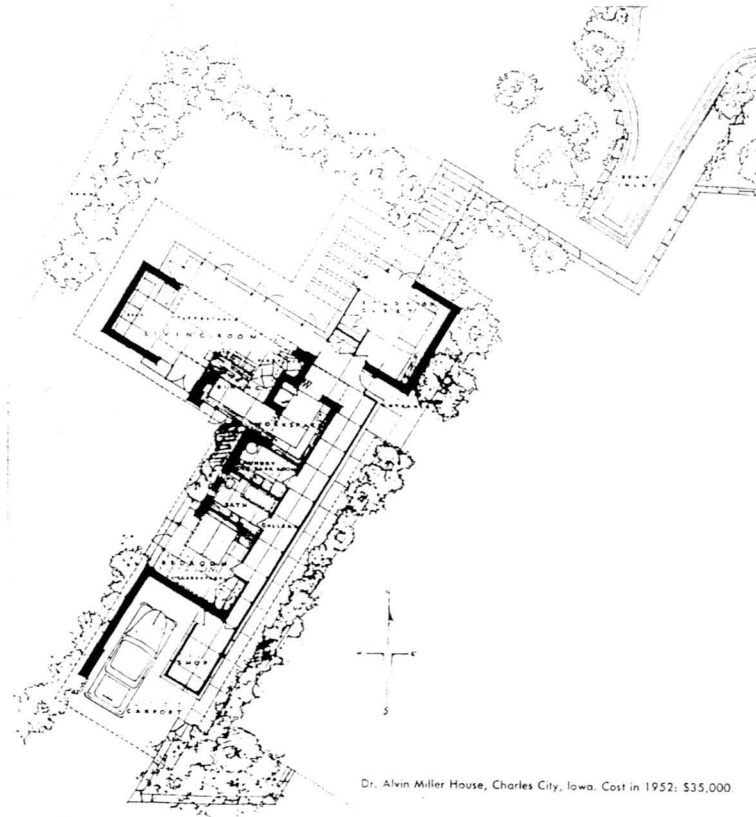


Figure 47. Miller house, Charles City, Ia., 1946, plan
(Wright 1954, 188)

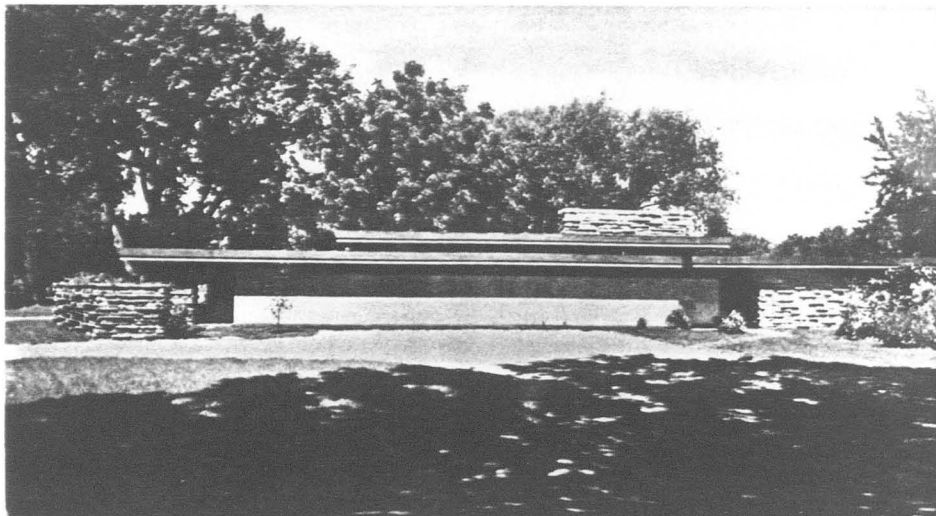


Figure 48. Miller house, view from entrance court
(Wright 1954, 194)

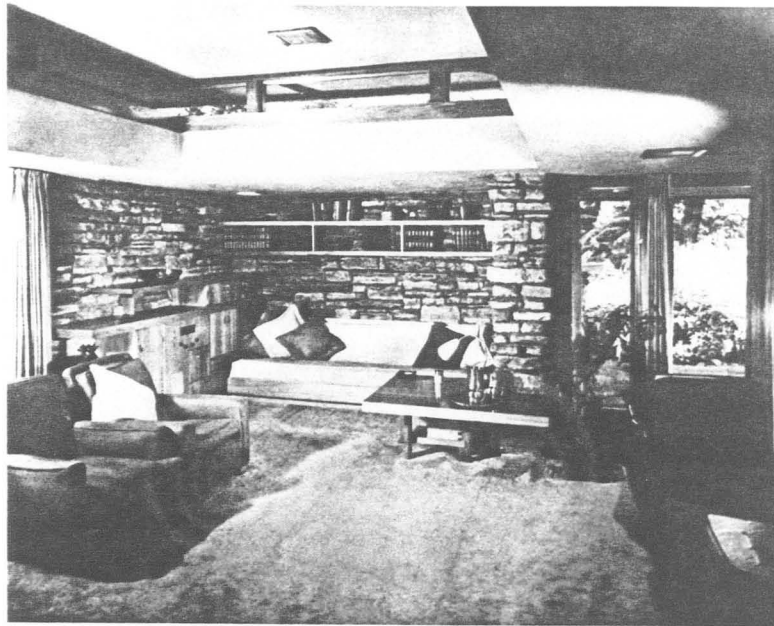


Figure 49. Miller house, living room
(Wright 1954, 193)

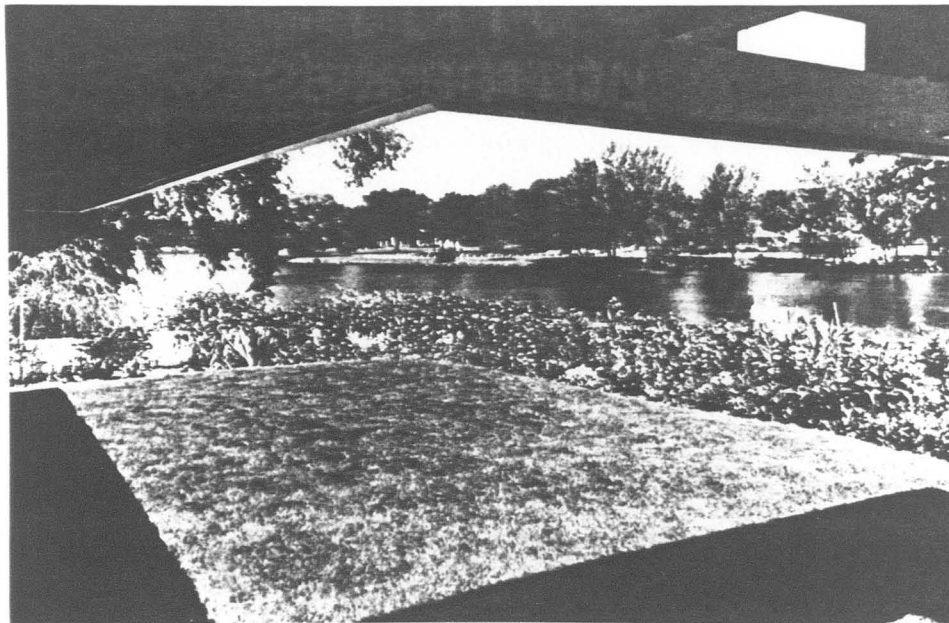


Figure 50. Miller house, view toward river
Wright 1954, 190)



Figure 51. Miller house, view of garden
(Wright 1954, 189)

CHAPTER 6. SUMMARY AND CONCLUSIONS

In the foregoing chapters, an analysis has been presented which relates to the appeal of Wright's work. It has been shown that this appeal may be understood in part through reference to particular "patterns" which Alexander has defined and described. Alexander's theory explains that it is the occurrence of such patterns which accounts for the special quality without a name" which he describes. I believe this is the same special and distinctive quality which is sensed in Wright's work.

Further, in summary, we see that these patterns can be understood as principles to be applied within a particular context in order to bring about a suitable form for the building project at hand. Through the discussion here of these principles as manifested in Wright's work, we have seen that these principles consistently are applied, though the forms developed in application often were purposely varied or were expressions of Wright's maturity in their use.

Finally, we see that these patterns/principles also occurred/were applied regardless of social or economic conditions directing design or construction. For example, five of the six Prairie houses presented in the matrix were built for fairly well-to-do clients in an era in which formal social rules were well understood. The act of visiting another's home involved customs of greeting and being greeted. In Prairie homes of that era, we have seen that an entrance room was always provid-

ed. But it was not only in the homes of the wealthy. Even the smaller, more economical Stockman house contained an entrance room (Fig. 27). Obviously, the custom of having some sort of greeting area was a necessity.

However, and this is important, there is change in the appearance of entry spaces in the Usonians. Not only were many of these houses built for middle-class clients, but they were also built in an era much different from that in which Prairie houses were built. No longer were there social customs requiring parlors and semi-elegant entrance spaces for the express purpose of welcoming visitors. Yet Wright still incorporated some sort of an area directly inside the main entrance to address that function. Indeed, such areas may have been nothing more than a short passage, like the one in the Jacobs house (Fig. 33), but they served the same purpose.

Not only does this underscore the change in social values, but it also points out the nature of the principles with which Wright worked. They were not always used as a reflection of social or economic times, but were the result of something else - of human nature. They were reflections of Wright's own life as a human being.

To better understand this context for Wright's principles, it is helpful to understand that Alexander's patterns are grounded in human instinct, and the forces which they resolve include forces of human nature. They acknowledge that within a

particular context, people tend to want to be able to do particular things. The patterns recognize "organic intuitions based on natural desires of people to let the forces they experience run free" (Alexander 1977, 834). Indeed, if one were to examine the patterns of Alexander closely, it would be discerned that many of the solutions are based upon research into human nature.

For example, pattern 130, ENTRANCE ROOM provides some characteristic desires of humans as the basis of its solution. "A person answering the door often tries to see who is at the door before they open it. People do not want to go out of their way to peer at people on the doorstep." As for leaving a place, Alexander says, "[And] once they have finally decided to go, people try to leave without hesitation. People try to make their goodbye as nonabrupt as possible and seek a comfortable break." And finally, "People seek privacy for the inside of their house."

Pattern 140, PRIVATE TERRACE ON THE STREET, also displays a basis in human needs. "We have within our natures tendencies toward both communality and individuality. A good house supports both kinds of experience: the intimacy of a private haven and our participation with a public world."

Pattern 180, WINDOW SEAT, shows how human desires are often in conflict with each other. A person likes to sit and be comfortable while at the same time he is drawn toward the light from a window. If there is no WINDOW SEAT where these desires

can be resolved, there is no way of overcoming this conflict of desires.

Essentially, one of the functions of the patterns contained in A Pattern Language is to help make their users more aware of some very common feelings. The patterns are based on fundamental realities - "realities that everyone already knows, in his innermost self. You know that small alcoves, arcades, low ceilings, opening windows, sheltering roofs, make fundamental sense." People have forgotten this, Alexander says, because society has filled their minds with distorting images. The patterns make it possible to recognize fundamental, innermost feelings, and what is true (1979, 544).

In the final chapter of The Timeless Way of Building Alexander stresses that at the very base of creating buildings which have the "quality without a name" is the need to build as "egoless" as possible. This happens easiest when "we honestly forget ourselves" and no "outward glance" is allowed (535). What this means is that the builder does not become overawed by the image of the building and builds what it "is," not what it "ought to be" (543).

In this final chapter Alexander also refers back to the essence of the patterns. That essence is that the patterns are solutions to the resolution of forces which occur within a certain context. But he indicates that eventually patterns are needless.

Once a person has freed himself to such an extent, that he can see the forces as they really are, and make a building which is shaped by them alone, and not affected or distorted by his images - he is then free enough to make the building without patterns at all - because the knowledge which the patterns contain, the knowledge of the way the forces really act, is his (543).

From Wright's work, it appears that he too was conscious of "intuitions based on natural desires," which Alexander emphasizes (1977, 834). In fact, it seems possible that Wright was able to see the forces of human nature inherent in the conditions of each project and that they were the things which most greatly affected his design of buildings. Alexander feels that the existence of a PRIVATE TERRACE ON THE STREET of the Cheney House in Oak Park, Illinois suggests Wright's intuitive grasp of the forces of the human nature calling it into being (1977, 834). Wright's daughter Iovanna notes that this intuitive approach was forged early in his life: "Instinctively he knew that the need for shelter should also fulfill the finer human need for beauty: a home not only must belong to its place and time but should create a world in which the inhabitant can find the most noble elements of living" (Wright 1962, 24).

But the topic of intuition on Wright's part leads to understanding how human nature came to form the basis of his principles. It is apparent to me that Wright used his personal sense of what he liked and disliked to discern universal principles of design. By doing so, Wright promoted his own human nature, and, by projection, everyone's human nature, as the ideal, the

measure of architecture, and developed principles based upon it. Robert McCarter gives insight into Wright's search for principle. He says that Wright

used any opportunity to design, no matter how ephemeral the outcome. While living in Oak Park he would bring home gas-filled balloons for his children, then would spend hours in the vaulted playroom, helping the children arrange the brightly colored spheres in different patterns by tying them to furniture and playing out the strings to varying lengths. His family tells similar stories of the difficulties they encountered getting dinner started on time; Wright not only designed the room, the table, the chairs, the tablecloth, and the napkins, but he also insisted on arranging these and the plates, glasses, and utensils in ever-new and ever-more dynamic compositions (243).

What was Wright doing? McCarter contends that Wright was "practicing" his design skill in doing such things, but I would suggest more. Wright, like anyone practicing a skill, must have had some ideal in mind toward which he was reaching. I suggest that Wright was indeed "practicing," with the goal of honing principles of design. He was searching for basic elements of law and order that were archetypal and fundamental. But the important point to consider is that Wright was most likely using his own sense of "good" and "bad" to strengthen those principles. By doing this, Wright suggests that each person's likes and dislikes, rooted in fundamental human nature, are indeed enough to determine archetypal principles. This ultimately leads to definite ideas of "good" and "bad" which have an objective tone about them.

This concept is strongly evident in advice which Wright

once gave to beginning architects concerning personal taste. Among several points were three that suggest the belief, on Wright's part, that personal taste has an objective source but should be trusted only as far as it is challenged. First, "Immediately begin to form the habit of thinking 'why' concerning any effects that please or displease you." Second, "Take nothing for granted as beautiful or ugly, but take every building to pieces, and challenge every feature. Learn to distinguish the curious from the beautiful." Third, "Get the habit of analysis - analysis will in time enable synthesis to become your habit of mind" (1970, 235).

It would appear, then, that Wright put great value in one's own taste and indeed, practiced it all his life. By arranging furniture, tableware, balloons, etc., he was searching for what pleased him and asking "why" it did so. In the development of his architecture, he focussed on his innate feelings about houses and those qualities which he felt defined the house. For example: "And the feeling that the house should look as though it began . . . at the ground put a projecting base course as a visible edge to . . . [the] foundation where, as a platform, it was evident preparation for the building itself and welded the structure to the ground" (1954, 16). This indicates how a feeling led to one of the principles that Wright used in nearly all of his houses, if not all. In addition, the foregoing quote strongly parallels what Alexander says in his pattern, CONNECTION TO THE EARTH. Analysis no

doubt led to the principles Wright used, and because they were based on human feelings and human nature, they greatly strengthened his ability to touch human sensibilities, "the strings of the instrument upon which the true artist plays" (Wright 1931, 101).

We may conclude, therefore, that Wright's work has an appeal for us, in part, because the patterns of Alexander are present, and because these patterns reflect the innate feelings of people concerning the physical environment. In addition to scientific data and research to justify his patterns, Alexander claims self-evidence as proof that his patterns are good. Each person can confirm for himself or herself whether buildings seem lifeless without the inclusion of such patterns, or life inspiring when they are included.

Further, if we recognize that Wright's principles follow from the same understanding as do Alexander's patterns, we might conclude that Alexander's method can possibly lead to a Wright-like appeal in one's own work. That Wright appeal, though, must be separated from Wright's aesthetic and his personal style. The appeal is really no more Wright than it is Alexander. It is the naturalness, genuineness, and resoluteness that appear from working in their manner. It is working with respect for certain fundamental patterns or principles which govern all good design.

Finally, this focus on fundamentals brings the element of

discipline to the issue of design as well. Using principles or patterns requires discipline on the part of the designer, for the designer must refer to these from the start, ultimately producing, from their application to existing design parameters and conditions, suitable and attractive forms. Thus one can see that the introduction of such patterns or principles brings with them the responsibility to use them.

This approach of Alexander and of Wright, however, is more than a method to be applied; it is a way of thinking about design. Alexander's ultimate goal for those who would use his patterns is for them to become "egoless" - to see the environment for the patterns they really are. I believe that Wright was able "to see" in this way, and to harmonize as well this vision with his own innate feelings, what Alexander calls "the first things - the innermost secret likes and dislikes we have" (1979, 545). Ultimately, Wright's greatest design secret appears to have been his state of mind. Alexander, through his work, has developed a method for design which reaches toward that secret and helps in developing a Wright-like, "natural" appeal.

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APPENDIX: PATTERN DESCRIPTIONS

Each pattern is an "invariant field, needed to resolve a conflict among certain forces..." (Alexander 1979, 275). As presented in A Pattern Language, each pattern contains a "headline" which gives the essence of the problem - the conflict - and a solution - "the heart of the pattern" - which describes, in terms of physical and social relationships, how that problem may be solved in order to bring about "the quality without a name." Following are the "headlines" and the solutions for each pattern included in the matrix above. These are provided in order that the reader may have an understanding for how the patterns attempt to describe the built environment.

105 SOUTH-FACING OUTDOORS **

Problem: People use open space if it is sunny, and do not use it if it isn't, in all but desert climates.

Solution: Always place buildings to the north of the outdoor spaces that go with them, and keep the outdoor spaces to the south. Never leave a deep band of shade between the building and the sunny part of the outdoors.

106 POSITIVE OUTDOOR SPACE **

Problem: Outdoor spaces which are merely "left over" between buildings will, in general, not be used.

Solution: Make all the outdoor spaces which surround and lie between your buildings positive. Give each one some degree of enclosure; surround each space with wings of buildings, trees, hedges, fences, arcades, and trellised walks, until it becomes an entity with a positive quality and does not spill out indefinitely around corners.

107 WINGS OF LIGHT **

Problem: Modern buildings are often shaped with no concern for natural light - they depend almost entirely on artificial light. But buildings which displace natural light as the major source of illumination are not fit places to spend the day.

Solution: Arrange each building so that it breaks down into wings which correspond, approximately, to the most important natural social groups within the building. Make each wing

long and as narrow as you can - never more than 25 feet wide.

109 LONG THIN HOUSE *

Problem: The shape of a building has a great effect on the relative degrees of privacy and overcrowding in it, and this in turn has a critical effect on people's comfort and well being.

Solution: In small buildings, don't cluster all the rooms together around each other; instead string out the rooms one after another, so that the distance between each room is as great as it can be.

110 MAIN ENTRANCE **

Problem: Placing the main entrance is perhaps the single most important step you take during the evolution of a building plan.

Solution: Place the main entrance of the building at a point where it can be seen immediately from the main avenues of approach and give it a bold, visible shape which stands out in front of the building.

111 HALF-HIDDEN GARDEN *

Problem: If a garden is too close to the street, people won't use it because it isn't private enough. But if it is too far from the street, then it won't be used either, because it is too isolated.

Solution: Do not place the garden fully in front of the house, not fully to the back. Instead, place it in some kind of half-way position, side-by-side with the house, in a position which is half-hidden from the street, and half-exposed.

112 ENTRANCE TRANSITION **

Problem: Buildings, and especially houses, with a graceful transition between the street and the inside, are more tranquil than those which open directly off the street.

Solution: Make a transition space between the street and the front door. Bring the path which connects street and entrance through this transition space, and mark it with a change of light, a change of sound, a change of direction, a change of surface, a change of level, perhaps by gateways which make a change of enclosure, and above all with a change of view.

113 CAR CONNECTION

Problem: The process of arriving in a house, and leaving it, is fundamental to our daily lives; and very often it involves a car. But the place where cars connect to houses, far from being important and beautiful, is often off to one side and neglected.

Solution: Place the parking place for the car and the main entrance, in such a relation to each other, that the shortest route from the parked car into the house, both to the kitchen

and to the living rooms, is always through the main entrance. Make the parking place for the car into an actual room which makes a positive and graceful place where the car stands, not just a gap in the terrain.

116 CASCADE OF ROOFS *

Problem: Few buildings will be structurally and socially intact, unless the floors step down toward the ends of wings, and unless the roof, accordingly, forms a cascade.

Solution: Visualize the whole building, or building complex, as a system of roofs. Place the largest, highest, and widest roofs over those parts of the building which are not significant: when you come to lay the roofs out in detail, you will be able to make all lesser roofs cascade off these large roofs and form a stable self-buttressing system, which is congruent with the hierarchy of social spaces underneath the roofs.

117 SHELTERING ROOF **

Problem: The roof plays a primal role in our lives, The most primitive buildings are nothing but a roof. If the roof is hidden, if its presence cannot be felt around the building, or if it cannot be used, then people will lack a fundamental sense of shelter.

Solution: Slope the roof or make a vault of it, make its entire surface visible, and bring the eaves of the roof down low, as low as 6'-0" or 6'-6" at places like the entrance, where people pause. Build the top story of each wing right into the roof, so that the roof does not only cover it, but actually surrounds it.

127 INTIMACY GRADIENT **

Problem: Unless the spaces in a building are arranged in a sequence which corresponds to their degrees of privateness, the visits made by strangers, friends, guests, clients, family, will always be a little awkward.

Solution: Lay out the spaces of a building so that they create a sequence which begins with the entrance and the most public parts of the building, then leads into the slightly more private areas, and finally to the most private domains.

128 INDOOR SUNLIGHT *

Problem: If the right rooms are facing south, a house is bright and sunny and cheerful; if the wrong rooms are facing south, the house is dark and gloomy.

Solution: Place the most important rooms along the south edge of the building, and spread the building out along the east-west axis. Fine tune the arrangement so that the proper rooms are exposed to the south-east and the south-west sun. For example: give the common area a full southern exposure, bedrooms south-east, porch south-west. For most climates, this

means the shape of the building is elongated east-west.

129 COMMON AREAS AT THE HEART **

Problem: No social group - whether a family, a work group, or a school group - can survive without constant informal contact among its members.

Solution: Create a single common area for every social group. Locate it at the center of gravity of all the spaces the group occupies, and in such a way that the paths which go in and out of the building lie tangent to it.

130 ENTRANCE ROOM **

Problem: Arriving in a building, or leaving it, you need a room to pass through, both inside the building and outside it. This is the entrance room.

Solution: At the main entrance to a building, make a light-filled room which marks the entrance and straddles the boundary between indoors and outdoors, covering some space outdoors and some space indoors. The outside part may be like an old-fashioned porch; the inside like a hall or sitting room.

131 THE FLOW THROUGH ROOMS

Problem: The movement between rooms is as important as the rooms themselves; and its arrangement has as much effect on social interaction in the rooms, as the interiors of the rooms.

Solution: As far as possible, avoid the use of corridors and passages. Instead, use public rooms and common rooms as rooms for movement and for gathering. To do this, place the common rooms to form a chain, or loop, so that it becomes possible to walk from room to room - and so that private rooms open directly off these public rooms. In every case, give this indoor circulation from room to room a feeling of great generosity, passing in a wide and ample loop around the house, with views of fires and great windows.

132 SHORT PASSAGES *

Problem: "...long, sterile corridors set the scene for everything bad about modern architecture."

Solution: Keep passages short. Make them as much like rooms as possible, with carpets or wood on the floor, furniture, bookshelves, beautiful windows. Make them generous in shape, and always give them plenty of light; the best corridors and passages of all are those which have windows along an entire wall.

133 STAIRCASE AS A STAGE

Problem: A staircase is not just a way of getting from one floor to another. The stair is itself a space, a volume, a part of the building; and unless this space is made to live, it will be a dead spot, and work to disconnect the building and to tear its processes apart.

Solution: Place the main stair in a key position, central and visible. Treat the whole staircase as a room. Arrange it so that the stair and the room are one, with the stair coming down around one or two walls of the room. Flare out the bottom of the stair with open windows or balustrades and with wide steps so that the people coming down the stair become part of the action in the room while they are on the stair, and so that people below will naturally use the stair for seats.

136 COUPLE'S REALM *

Problem: The presence of children in a family often destroys the closeness and the special privacy which a man and wife need together.

Solution: Make a special part of the house distinct from the common areas and all the children's rooms, where the man and woman of the house can be together in private. Give this place a quick path to the children's rooms, but, at all costs, make it a distinctly separate realm.

137 CHILDREN'S REALM *

Problem: If children do not have space to release a tremendous amount of energy when they need to, they will drive themselves and everybody else in the family up the wall.

Solution: Start by placing the children's bedrooms in a separate position toward the back of the house, and in such a way that a continuous playspace can be made from this area to the street, almost like a wide swath inside the house, muddy, toys strewn along the way, touching those family rooms which children need - the bathroom and the kitchen most of all - passing the common area along one side, reaching out to the street, either through its own door or through the entrance room, and ending in an outdoor room, connected to the street, and sheltered, and large enough so that the children can play in it when it rains, yet still be outdoors.

138 SLEEPING TO THE EAST *

Problem: This is one of the patterns people most often disagree with. However, we believe they are mistaken.

Solution: Give those parts of the house where people sleep an eastern orientation, so that they wake up with the sun and light. This means, typically, that the sleeping area needs to be on the eastern side of the house; but it can also be on the western side provided there is a courtyard or a terrace to the east of it.

140 PRIVATE TERRACE ON THE STREET **

Problem: The relationship of a house to a street is often confused: either the house opens entirely to the street and there is no privacy; or the house turns its back on the street, and communion with street life is lost.

Solution: Let the common rooms open onto a wide terrace or

a porch which looks into the street. Raise the terrace slightly above street level and protect it with a low wall, which you can see over if you sit near it but which prevents people on the street from looking into the common rooms.

141 A ROOM OF ONE'S OWN **

Problem: No one can be close to others, without also having frequent opportunities to be alone.

Solution: Give each member of the family a room of his own, especially adults. A minimum room of one's own is an alcove with desk, shelves, and curtain. In all cases, especially the adult ones, place these rooms at the far ends of the intimacy gradient - far from the common rooms.

142 SEQUENCE OF SITTING SPACES *

Problem: Every corner of a building is a potential sitting space. But each sitting space has different needs for comfort and enclosure according to its position in the intimacy gradient.

Solution: Put in a sequence of graded sitting spaces throughout the building, varying according to their degree of enclosure. Enclose the most formal ones entirely, in rooms by themselves; put the least formal ones in corners of other rooms, without any kind of screen around them; and place the intermediate one with partial enclosure round them to keep them connected to some larger space, but also partly separate.

159 LIGHT ON TWO SIDES OF EVERY ROOM **

Problem: When they have a choice, people will always gravitate to those rooms which have light on two sides, and leave the rooms which are lit only from one side unused and empty.

Solution: Locate each room so that it has outdoor space outside it on at least two sides, and then place windows in these outdoor walls so that natural light falls into every room from more than one direction.

160 BUILDING EDGE **

Problem: A building is most often thought of as something which turns inward - toward its rooms. People do not often think of a building as something which must also be oriented toward the outside.

Solution: Make sure that you treat the edge of the building as a "thing," a "place," a zone with volume to it, not a line or interface which has no thickness. Crenelate the edge of buildings with places that invite people to stop. Make places that have depth and a covering, places to sit, lean, and walk, especially at those points along the perimeter which look onto interesting outdoor life.

161 SUNNY PLACE **

Problem: The area immediately outside the building, to the south - that angle between its walls and the earth where the sun falls - must be developed and made into a place which lets people bask in it.

Solution: Inside a south-facing court, or garden, or yard, find the spot between the building and the outdoors which gets the best sun. Develop this spot as a special sunny place - make it the important outdoor room, a place to work in the sun, or a place for a swing and some special plants, a place to sunbathe. Be very careful indeed to place the sunny place in a position where it is sheltered from the wind. A steady wind will prevent you from using the most beautiful place.

163 OUTDOOR ROOM **

Problem: A garden is the place for lying in the grass, swinging, croquet, growing flowers, throwing a ball for the dog. But there is another way of being outdoors: and its needs are not met by the garden at all.

Solution: Build a place outdoors which has so much enclosure round it, that it takes on the feeling of a room, even though it is open to the sky. To do this, define it at the corners with columns, perhaps roof it partially with a trellis or a sliding canvas roof, and create "walls" around it, with fences, sitting walls, screens, hedges, or the exterior walls of the building itself.

166 GALLERY SURROUND *

Problem: If people cannot walk out from the building onto balconies and terraces which look toward the outdoor space around the building, then neither they themselves nor the people outside have any medium which helps them feel the building and the larger public world are intertwined.

Solution: Whenever possible, and at every story, build porches, galleries, arcades, balconies, niches, outdoor seats, awnings, trellised rooms and the like at the edges of buildings - especially where they open off public spaces and streets, and connect them by doors, directly to the rooms inside.

167 SIX-FOOT BALCONY **

Problem: Balconies which are less than six feet deep are hardly ever used.

Solution: Whenever you build a balcony, a porch, a gallery, or a terrace always make it at least six feet deep. If possible, recess at least a part of it into the building so that it is not cantilevered out and separated from the building by a simple line, and enclose it partially.

168 CONNECTION TO THE EARTH **

Problem: A house feels isolated from the nature around it, unless its floors are interleaved directly with the earth that is around the house.

Solution: Connect the building to the earth around it by building a series of paths and terraces and steps around the edge. Place them deliberately to make the boundary ambiguous - so that it is impossible to say exactly where the building stops and earth begins.

172 GARDEN GROWING WILD **

Problem: A garden which grows true to its own laws is not a wilderness, yet not entirely artificial either.

Solution: Grow grasses, mosses, bushes, flowers, and trees in a way which comes close to the way that they occur in nature: intermingled, without barriers between them, without bare earth, without formal flower beds, and with all the boundaries and edges made in rough stone and brick and wood which become a part of the natural growth.

173 GARDEN WALL *

Problem: Gardens and small public parks don't give enough relief from noise unless they are well protected.

Solution: Form some kind of enclosure to protect the interior of a quiet garden from the sights and sounds of passing traffic. If it is a large garden or a park, the enclosure can be soft, can include bushes, trees, slopes, and so on. The smaller the garden however, the harder and more definite the enclosure must become. In a very small garden, form the enclosure with buildings or walls; even hedges and fences will not be enough to keep out sound.

174 TRELLISED WALK **

Problem: Trellised walks have their own special beauty. They are so unique, so different from other ways of shaping a path, that they are almost archetypal.

Solution: Where paths need special protection or where they need some intimacy, build a trellis over the path and plant it with climbing flowers. Use the trellis to help shape the outdoor spaces on either side of it.

179 ALCOVES **

Problem: No homogeneous room, of homogeneous height, can serve a group of people well. To give a group a chance to be together, as a group, a room must also give them the chance to be alone, in one's and two's in the same space.

Solution: Make small places at the edge of any common room, usually no more than 6 feet wide and 3 to 6 feet deep and possibly much smaller. These alcoves should be large enough for two people to sit, chat, or play and sometimes large enough to contain a desk or a table.

180 WINDOW PLACE **

Problem: Everybody loves window seats, bay windows, and big windows with low sills and comfortable chairs drawn up to

them.

Solution: In every room where you spend any length of time during the day, make at least one window into a window place.

181 THE FIRE *

Problem: There is no substitute for fire.

Solution: Build the fire in a common space - perhaps in the kitchen - where it provides a natural focus for talk and dreams and thought. Adjust the location until it knits together the social spaces and rooms around it, giving them each a glimpse of the fire; and make a window or some other focus to sustain the place during the times when the fire is out.

182 EATING ATMOSPHERE

Problem: When people eat together, they may actually be together in spirit - or they may be far apart. Some rooms invite people to eat leisurely and comfortably and feel together, while others force people to eat as quickly as possible so they can go somewhere else to relax.

Solution: Put a heavy table in the center of the eating space - large enough for the whole family or the group of people using it. Put a light over the table to create a pool of light over the group, and enclose the space with walls or with contrasting darkness. Make the space large enough so the chairs can be pulled back comfortably, and provide shelves and counters close at hand for things related to the meal.

189 DRESSING ROOM *

Problem: Dressing and undressing, storing clothes, having clothes lying around, have no reason to be part of any larger complex of activities. Indeed they disturb other activities: they are so self-contained that they themselves need concentrated space which has no other function.

Solution: Give everyone a dressing room - either private or shared - between their bed and the bathing room. Make this dressing room big enough so there is an open area in it at least six feet in diameter; about six linear feet of clothes hanging space; and another six feet of open shelves; two or three drawers; and a mirror.

190 CEILING HEIGHT VARIETY **

Problem: A building in which the ceiling heights are all the same is virtually incapable of making people comfortable.

Solution: vary the ceiling heights continuously throughout the building, especially between rooms which open into each other, so that the relative intimacy of different spaces can be felt. In particular, make ceilings high in rooms which are public or meant for large gatherings, lower in rooms for smaller gatherings, and very low in rooms or alcoves for one or two people.

192 WINDOWS OVERLOOKING LIFE *

Problem: Rooms without a view are prisons for the people who have to stay in them.

Solution: In each room, place windows in positions which give the best possible views out over life: activities in streets, quiet gardens, anything different from the indoor scene.

193 HALF-OPEN WALL *

Problem: Rooms which are too closed prevent the natural flow of social occasions, and the natural process of transition from one social moment to another. And rooms which are too open will not support the differentiation of events which social life requires.

Solution: Adjust the walls, openings, and windows in each indoor space until you reach the right balance between open, flowing space and closed cell-like space. Do not take it for granted that each space is a room; nor, on the other hand, that all spaces must flow into each other. The right balance will always lie between these extremes: no one room entirely enclosed; and no space totally connected to another. Use combinations of columns, half-open walls, porches, indoor windows, sliding doors, low sills, french doors, sitting walls, and so on, to hit the right balance.

194 INTERIOR WINDOWS

Problem: Windows are most often used to create connections between the indoor and the outdoors. But there are many cases when an indoor space needs a connecting window to another indoor space.

Solution: Put in fully glazed fixed windows between rooms which tend to be dead because they have too little action in them or where inside rooms are unusually dark.

197 THICK WALLS **

Problem: Houses with smooth hard walls made of prefabricated panels, concrete, gypsum, steel, aluminum, or glass always stay impersonal and dead.

Solution: Open your mind to the possibility that the walls of your building can be thick can occupy a substantial volume - even actual usable space - and need not be merely thin membranes which have no depth. Decide where these thick walls ought to be.

198 CLOSETS BETWEEN ROOMS *

Problem: The provision of storage and closets usually comes as an afterthought.

Solution: Place closets on interior walls which lie between two rooms and between rooms and passages where you need acoustic insulation. Place them so as to create transition spaces for the doors into the rooms. On no account put closets

on exterior walls. It wastes the opportunity for good acoustic insulation and cuts off precious light.

200 OPEN SHELVES *

Problem: Cupboards that are too deep waste valuable space, and it always seems that what you want is behind something else.

Solution: Cover the walls with narrow shelves of varying depth but always shallow enough so that things can be placed on them one deep - nothing hiding behind anything else.

201 WAIST-HIGH SHELF

Problem: In every house and every workplace there is a daily "traffic" of the objects which are handled most. Unless such things are immediately at hand, the flow of life is awkward, full of mistakes; things are forgotten, misplaced.

Solution: Build waist-high shelves around at least a part of the main rooms where people live and work. Make them long, 9 to 15 inches deep, with shelves or cupboard underneath. Interrupt the shelf for seats, windows, and doors.

202 BUILT-IN SEATS *

Problem: Built-in seats are great. Everybody loves them. They make a building feel comfortable and luxurious. But most often they do not actually work. They are placed wrong, or too narrow, or the back does not slope, or the view is wrong, or the seat is too hard. This pattern tells you what to do to make a built-in seat that really works.

Solution: Provide built-in seats in positions and places where they will naturally get the most use.

207 GOOD MATERIALS **

Problem: There is a fundamental conflict in the nature of materials for building in industrial society.

Solution: Use only biodegradable, organic, or earth-based materials, which are easy to cut and modify on site.

209 ROOF LAYOUT *

Problem: What kind of roof plan is organically related to the nature of your buildings?

Solution: Arrange the roofs so that each distinct roof corresponds to an identifiable social entity in the building or building complex.

215 GROUND FLOOR SLAB

Problem: The slab is the easiest, cheapest, and most natural way to lay a ground floor.

Solution: Build a ground floor slab, raised slightly above the ground by first building a low perimeter wall around the building, tied into the column foundations, and then filling it with rubble, gravel, and concrete.

218 WALL MEMBRANES *

Problem: In organic construction the walls must take their share of the loads. They must work continuously with the structure on all four of their sides; and act to resist shear and bending, and take loads in compression.

Solution: Build the wall as a membrane which connects the columns and door frames and windows frames and is, at least in part, continuous with them.

230 RADIANT HEAT *

Problem: This pattern is a biologically precise formulation of the intuition that sunlight and a hot blazing fire are the best kinds of heat.

Solution: Choose a way of heating your space - especially those rooms where people are going to gather when it is cold - that is essentially a radiative process, where the heat comes more from radiation than convection.

232 ROOF CAPS

Problem: There are few cases in traditional architecture where builders have not used some roof detail to cap the building with an ornament.

Solution: Choose a natural way to cap the roof - some way which is in keeping with the kind of construction, and the meaning of the building. The caps may be structural; but their main function is decorative - they mark the top - they mark the place where the roof penetrates the sky.

234 LAPPED OUTSIDE WALLS

Problem: The main function of a building's outside wall is to keep weather out. It can only do this if the materials are joined in such a way that they cooperate to make impervious joints.

Solution: Build up the exterior wall surface with materials that are lapped against the weather: either "internally lapped," like exterior plaster, or more literally lapped, like shingles and boards and tiles. In either case, choose a material that is easy to repair in little patches, inexpensively, so that little by little, the wall can be maintained in good condition indefinitely.

236 WINDOWS WHICH OPEN WIDE *

Problem: Many buildings nowadays have no opening windows at all; and many of the opening windows that people do build, don't do the job that opening windows ought to do.

Solution: Put in side-hung casements that open outward. Here and there, go all the way and build full French windows.

237 SOLID DOORS WITH GLASS

Problem: An opaque door makes sense in a vast house or

palace, where every room is large enough to be a world unto it self; but in a small building, with small rooms, the opaque door is only very rarely useful.

Solution: As often as possible build doors with glazing in them, so that the upper half at least, allows you to see through them. At the same time, build the doors solid enough, so that they give acoustic isolation and make a comfortable "thunk" when they are closed.

238 FILTERED LIGHT *

Problem: Light filtered through leaves, or tracery, is wonderful. But why?

Solution: Where the edge of a window or the overhanging eave of a roof is silhouetted against the sky, make a rich, detailed tapestry of light and dark, to break up the light and soften it.

239 SMALL PANES **

Problem: When plate glass windows became possible, people thought that they would put us more directly in touch with nature. In fact, they do the opposite.

Solution: Divide each window into small panes. These panes can be very small indeed, and should hardly ever be more than a foot square.

240 HALF-INCH TRIM **

Problem: Totalitarian, machine buildings do not require trim because they are precise enough to do without. But they buy their precision at a dreadful price: by killing the possibility of freedom in the building plan.

Solution: Wherever two materials meet, place a piece of trim over the edge of the connection. Choose the pieces of trim so that the smallest piece, in each component, is always of the order of 1/2 inch wide.

243 SITTING WALL **

Problem: In many places walls and fences between outdoor spaces are too high; but no boundary at all does injustice to the subtlety of the divisions between the spaces.

Solution: Surround any natural outdoor area, and make minor boundaries between outdoor areas with low walls, about 16 inches high, and wide enough to sit on, at least 12 inches wide.

245 RAISED FLOWERS *

Problem: Flowers are beautiful along the edges of paths, buildings, outdoor rooms - but it is just in these places that they need the most protection from traffic. Without some protection they cannot easily survive.

Solution: Soften the edges of buildings, paths, and outdoor areas with flowers. Raise the flower beds so that people

can touch the flowers, bend to smell them, and sit by them. And build the flower beds with solid edges, so the people can sit on them, among the flowers too.

249 ORNAMENT **

Problem: All people have the instinct to decorate their surroundings.

Solution: Search around the building, and find those edges and transitions which need emphasis or extra binding energy. Find simple themes and apply the elements of the theme over and again to the edges and boundaries which you decide to mark. Make the ornaments work as seams along the boundaries and edges so that they knit the two sides together and make them one

250 WARM COLORS **

Problem: The greens and grays of hospitals and office corridors are depressing and cold. Natural wood, sunlight, bright colors are warm. In some way, the warmth of the colors in a room makes a great deal of difference between comfort and discomfort.

Solution: Choose surface colors which, together with the color of the natural light reflected light, and artificial lights, create a warm light in the rooms.

251 DIFFERENT CHAIRS

Problem: People are different sizes; they sit in different ways. And yet there is a tendency in modern times to make all chairs alike.

Solution: Never furnish any place with chairs that are identically the same. Choose a variety of different chairs, some big, some small, some softer than others, some rockers, some very old, some new, with arms, without arms, some wicker, some wood, some cloth.

252 POOLS OF LIGHT **

Problem: Uniform illumination - the sweetheart of the lighting engineers - serves no useful purpose whatsoever. In fact, it destroys the social nature of space, and makes people feel disoriented and unbounded.

Solution: Place the lights low, and apart, to form individual pools of light which encompass chairs and tables like bubbles to reinforce the social character of the spaces which they form. Remember that you can't have pools of light without the darker places in between.